

# HELMINTHOLOGICAL ABSTRACTS

*incorporating*  
BIBLIOGRAPHY OF HELMINTHOLOGY  
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# HELMINTHOLOGICAL ABSTRACTS

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1952

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# HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY

FOR THE YEAR 1952

Vol. 21, Part 3

## 67—Acta Medica Scandinavica.

- a. HAAPANEN, L., 1952.—“On the correlation between the sedimentation rate and the red cell count in some diseases of the blood.” 141 (5), 367-379.

(167a) The sedimentation rate and the red cell count in various types of anaemia were studied in a small number of cases and their relationship compared. There was a distinct correlation in hypochromic, idiopathic pernicious anaemia and in pernicious tapeworm [*Diphyllobothrium*] anaemia, but not in posthaemorrhagic anaemia. R.T.L.

## 68—Acta Medica Scandinavica. Supplementum.

- a. BONSDORFF, B. VON & GORDIN, R., 1952.—“Antianemic activity of dried fish tapeworm. *Diphyllobothrium latum* and pernicious anemia XIII.” 142, Suppl. 266, pp. 283-292.  
b. BUSCH, E. & COOPER, M., 1952.—“Paragonimiasis: a case with metastasis to the brain. Surgical removal.” 142, Suppl. 266, pp. 343-348.

(168a) In order to test whether *Diphyllobothrium latum* assimilates extrinsic factor, i.e. vitamin B<sub>12</sub>, tests with 5 or 10 gm. of dried, pulverized *D. latum* given daily for eight days were made in five cases of cryptogenetic pernicious anaemia and in four cases of pernicious tapeworm anaemia. All patients were kept on a meat-free diet. In the five cases of cryptogenetic pernicious anaemia, in which the *D. latum* powder was given suspended in 100 ml. of neutralized human gastric juice, a very good blood response was obtained; the powder alone had no effect. In the four cases of pernicious tapeworm anaemia, in which the powder was administered in water, a marked blood response was noted in three cases but not in the remaining one case. The anti-anemic effect of 5-10 gm. of dried *D. latum* is the equivalent of approximately 5 µgm. of vitamin B<sub>12</sub>. These and previous results suggest that the living *D. latum* absorbs a considerable amount of vitamin B<sub>12</sub> from its host in cases where pernicious anaemia results from the presence of the parasite in the proximal part of the intestine. P.M.B.

(168b) Busch & Cooper describe the only known case of surgical diagnosis and removal of cerebral granuloma due to *Paragonimus westermani*. P.M.B.

## 69—Advisory Leaflet. Department of Agriculture, Scotland.

- a. ANON., 1952.—“Eelworm in potatoes.” New series, No. 22, 8 pp.

## 70—Ärztliche Wochenschrift. Berlin.

- a. PETRASCH & GAASE, 1952.—“Die Trichinose-Epidemie in Meschede in Westfalen im Herbst 1950.” 7 (13), 296-298.

(170a) Petrasch & Gaase describe an outbreak of trichinellosis at Meschede (Westphalia) in the autumn of 1950. The epidemic was mild and of the 436 persons affected only nine were taken to hospital: there were no deaths. The source of infection was a pig imported from Poland which had been passed as non-trichinous after normal inspection; sausages made

\* Titles so marked throughout this number have not been seen in the original.

from the pig, however, were found to be infected when examined after the outbreak had started. Complement fixation was used to diagnose the infection in man, using Trichinea antigen "Hoechst". Early intestinal disturbances were either very mild or completely lacking. Treatment with foudadin caused marked improvement; adults were given eight to ten (later six to eight) intramuscular injections of 3.5 c.c. and children four to six injections of 3.5 c.c. A.E.E.

#### 171—Agricultural Gazette of New South Wales.

- a. BLACK, S. L., 1952.—"Liver fluke disease of sheep." 63 (4), 195-198; (5), 255-260.

(171a) *Fasciola hepatica* was probably introduced into Australia in the very early days of settlement. It is known that before the recent improvements in controlling the infection losses from this parasite were common and in some areas it was impossible to run sheep with success. The vector is *Limnaea brazieri*. In Australia it breeds from August to January and likes shallow water up to a depth of three or four inches but is seldom seen at depths of eight or nine inches. Sheep probably become infected between mid-December and the end of May. R.T.I.

#### 172—Agricultural Journal. Department of Agriculture, Fiji.

- a. GARNETT, K. J., 1952.—"Internal parasites of cattle and goats in Fiji." 23 (1), 17-20.

#### 173—Agriculture Pratique. Paris.

- a. PICHON, G., 1952.—"Les strongyloses chez les ovins et les bovins." 116 (5), 266-267.

#### 174—American Fruit Grower.

- a. DIETER, C. E., 1952.—"Soil fumigation. Controlling soil pests of fruits and vegetables makes possible remarkable yield increases." 72 (3), 28-29.

#### 175—American Heart Journal.

- a. GIRGIS, B., 1952.—"Pulmonary heart disease due to Bilharzia: the bilharzial cor pulmonale. A clinical study of twenty cases." 43 (4), 606-614.

(175a) Twenty cases of bilharzial cor pulmonale were met with in a series of 500 cardiac patients in the Fouad the 1st University Hospital, Cairo. There was always a history of repeated bilharzial infection. The disease can be produced either by *Schistosoma haematobium* or *S. mansoni*. Its pathology is a process of repeated embolism of the pulmonary arterioles by ova which escape into the perivascular tissues leading to a necrotizing arteriolitis. Healing results in an obliterative arteriolitis; the pulmonary blood flow is obstructed causing a rise of pulmonary pressure, dilatation of the pulmonary artery and its main branches, and hypertrophy of the right ventricle. The heart becomes enlarged. A diastolic shock is usually felt in the second left intercostal space. There is a harsh systolic murmur in the pulmonary area or a functional regurgitant murmur. The lungs are always emphysematous. Six X-ray pictures and two sets of electrocardiographic records illustrate the text. R.T.I.

#### 176—American Journal of Tropical Medicine and Hygiene.

- a. BEYE, H. K., EDGAR, S. A., MILLE, R., KESSEL, J. F. & BAMBRIDGE, B., 1952.—"Preliminary observations on the prevalence, clinical manifestations and control of filariasis in the Society Islands." 1 (4), 637-661. [French summary pp. 658-660.]  
 b. JACHOWSKI, Jr., L. A. & OTTO, G. F., 1952.—"Filariasis in American Samoa. II. Evidence of transmission outside of villages." 1 (4), 662-670.  
 c. McMULLEN, D. B., 1952.—"Schistosomiasis and molluscacides." 1 (4), 671-679.  
 d. OLIVIER, L., VAUGHN, C. M. & HENDRICKS, J. R., 1952.—"Schistosomiasis in an endemic area in the Dominican Republic." 1 (4), 680-687.  
 e. HOEKENGA, M. T., 1952.—"Treatment of ascariasis in children with hetrazan<sup>®</sup> syrup." 1 (4), 688-692.

- f. HUNTER, III, G. W., FREYTAG, R. E., RITCHIE, L. S., PAN, C., YOKOGAWA, M. & POTTS, D. E., 1952.—“Studies on schistosomiasis. VI. Control of the snail host of schistosomiasis in Japan with sodium pentachlorophenate (santobrite).” 1 (5), 831-847.
- g. GIBSON, C. L. & DALMAT, H. T., 1952.—“Three new potential intermediate hosts of human onchocerciasis in Guatemala.” 1 (5), 848-851.
- h. HIGHTOWER, J. A. & BAUMAN, P. M., 1952.—“Failure of aureomycin in the treatment of schistosomiasis.” 1 (5), 852.

(176a) In ten experimental areas on the coasts of Tahiti and Maiao in the Society Islands, a study of the epidemiology, clinical manifestations and control of filariasis bancrofti revealed microfilariae in 33.17% of 1,265 persons examined. In Tahiti the number of microfilariae was twice as high in men as in women, averaging 130.4 per 20 cu. mm. of blood in 71 men and 66.7 in 115 women, reaching a maximum between the ages of 40 and 49 years. In Tahiti 32% of 376 individuals over the age of one year, and in Maiao 46.7% of 165 over the age of three years, had clinical manifestations. In a group of 85 persons with lymphangitis who had their first attack between the ages of 20 and 29 years. Hetrazan, at the rate of 2 mg. per kg. body-weight three times daily for seven days, reduced the number with microfilariae from 34% to 19.4% in the course of a year, but resulted in no clinical improvement. In highly endemic areas control by dosing of the entire population with hetrazan, combined with the use of D.D.T. and cleaning up mosquito breeding places is recommended. *Aedes pseudoscutellaris* is the principal vector. P.M.B.

(176b) The findings of Jachowski jr. & Otto on the occurrence of day-biting *Aedes pseudoscutellaris*, vector of the non-periodic *Wuchereria bancrofti* in Samoa, are in sharp contrast to the generally accepted theories that the villages are the main centres of infection. The “index of transmission” (based on the density of *A. pseudoscutellaris* and the percentage of its infection with developing *W. bancrofti*) for mosquitoes collected in the bush at a distance of 175 to 275 yards from the centres of villages, exceeds the combined indices for those caught in the other three types of collecting centre: (i) the open malae or village green 25 yards from the nearest house, (ii) one of the houses selected at random, and (iii) a trail in the bush 50-100 yards from the houses. Many more mosquitoes were collected in houses in or near the bush than in those in cleared areas. Although mosquitoes occurred in every part of the bush they were only infected where there was evidence of recent human activity. The village is thus the focus of infection only in so far as the villagers are the sources of infection for the mosquitoes. Transmission is primarily in the bush along trails and in plantations. P.M.B.

(176c) At the Yamanashi endemic centre of schistosomiasis japonica where *Oncomelania cosmophora* is the vector, laboratory tests for molluscicidal activity were made with 413 mixtures containing 0.5 mg. of each of 10 chemicals, and with 1,675 separate chemical samples. Those which appeared to be toxic or moderately so were tested further in the laboratory and in the field; the results are summarized in three tables. Phenol compounds, especially dinitrophenols, figure largely among those with the highest percentage of kill, but other compounds may prove to be more practical, particularly from the point of view of the cost of effective amounts. P.M.B.

(176d) At Hato Mayor in the Dominican Republic the endemic area of schistosomiasis hansonii is very restricted. Although the vector, *Australorbis glabratus*, is common and frequently infected in streams close to the town, none was found more than 20 kilometres away. Out of 243 children between 5 and 15 years of age 52 had schistosome eggs in their faeces. R.T.L.

(176e) A syrup containing 30 mg. of hetrazan per c.c. proved a highly palatable preparation for the treatment of ascariasis in children. Each child received 6 mg. per lb. body-weight daily for four days. The dose was diluted in 50 to 100 c.c. of water and administered in the early morning. Of 95 children thus treated only 36% were cured although 74% passed some worms. In a further 30 children, for whom the dose was increased to 12 mg. per lb. daily for four days, the rate of cure rose to 80%. Although a satisfactory vermifuge

for use in private practice the occasional need for repetition makes it less suitable for mass treatment. R.T.II

(176f) Sodium pentachlorophenate (santobrite) was applied to the 12 miles of ditches which comprise the entire irrigation system of the 150-acre area of Nagatoishi in the spring and autumn of 1950 and 1951. The *Oncomelania nosophora* were reduced by 98.1% by the first application but repopulation by the residual snails was considerable by the end of the first summer. The autumn application in 1950 was less effective. In the spring of 1951 the snail count was low before treatment and some repopulation occurred in the summer of 1951. The fourth application gave an improved autumn kill which reduced the snail population by 99%. Santobrite is regarded as the molluscicide of choice because of its relatively high efficiency, and ease of handling and application. It is estimated that in the Saga-Fukuoka endemic area the cost of santobrite (excluding transport), using 30 lb. per acre twice yearly for a period of seven years would total \$52,000. R.T.II

(176g) In some areas of the almost inaccessible onchocerciasis zone of Huehuetenango *Simulium ochraceum* is completely absent. In the lower altitude of the Yepocapa onchocerciasis zone *S. exiguum* is the dominant biter while in other regions of the zone *S. haematopotum* replaces *S. ochraceum* in importance. *S. exiguum*, *S. veracruzianum* and *S. haematopotum* experimentally fed on heavily infected volunteers proved capable of developing *Onchocerca volvulus* larvae and must therefore be considered to be potential vectors in those endemic zones where they replace or supplement *S. ochraceum*, *S. metallicum* and *S. callidum* commonly accepted as intermediaries. R.T.II

#### 177—American Journal of Veterinary Research.

- a. TODD, A. C. & BROWN, R. G., 1952.—“Critical tests with teluene for ascarids and bots in horses.” 13 (47), 198–200.
- b. DRUDGE, J. H., 1952.—“Arsenamides in the treatment of canine filariasis.” 13 (47), 220–233.
- c. WADE, L. L., 1952.—“Effects of low temperature on the eggs of the common liver fluke (*Fasciola hepatica*) in beef livers.” 13 (48), 345–347.

(177a) Toluene, at the rate of 0.2 c.c. per lb. body-weight, killed and expelled within 24 hours 99.8% of *Parascaris equorum* whereas 0.1 c.c. per lb. body-weight killed only 47.5% in weanling and yearling horses. It was equally effective against immature and adult ascarids. Most of the evacuated worms were badly decomposed. R.T.II

(177b) Arsenamide failed to kill *Dirofilaria immitis* when administered orally to infected dogs. With daily intravenous doses of 0.45 mg. per kg. body-weight for fifteen days, the adult worms were regularly killed but the microfilariae survived in the uteri of the dead worms. R.T.II

(177c) Fluke-infested beef livers are condemned as unfit for human food under the U.S. Federal meat inspection and have to be kept at a temperature of not higher than 10°F. for not less than 48 hours in order to destroy the fluke eggs. As a result of experiments described in this paper these requirements have been amended and infected livers have to be held for not less than 10 days at a temperature not higher than 15°F. or for not less than five days at a temperature not higher than 10°F. The storage time at these temperatures is doubled for containers of liver over 7 inches but less than 27 inches thick. R.T.II

#### 178—Animal Health Leaflet. Ministry of Agriculture and Fisheries. London.

- a. ANON., 1952.—“Worms in poultry.” No. 22, 5 pp. [Revised.]

#### 179—Annals of Tropical Medicine and Parasitology.

- a. HOPKINS, C. A., 1952.—“Notes on the biology of certain *Culicoides* studied in the British Cameroons, West Africa, together with observations on their possible rôle as vectors of *Acanthocheilonema perstans*.” 46 (2), 165–172.

(179a) The possible role of *Culicoides* in the transmission of *Acanthocheilonema perstans* which is hyperendemic in the Kumba area of the rain-forest belt of the British Cameroons.

has not yet been assessed. Developing filarial larvae were found in 3 out of 70 *C. austeni* but could not be identified; none was found in 1,500 *C. grahami*. In the immediate vicinity of villages Hopkins found that 98% of the day-biting *Culicoides* were *C. grahami*. The most frequent night-biting species was *C. austeni* and, contrary to previous reports, this species bites on moonlight nights. Away from the villages *C. inornatipennis* was the common day-biting species. At Tiko an unidentified night-biting species was very prevalent. A study was made of the breeding sites of the various species: near human habitations *C. austeni* and *C. grahami* bred in large numbers in the rotting stems of felled banana trees but only at clearly defined stages of decay.

P.M.B.

#### 180—Antiseptic. Madras.

- a. GOVINDA RAO, A. R., 1952.—“Chemotherapy of filariasis.” 49 (2), 149–153.
- b. SHARMA, K. P., 1952.—“A case of multiple hydatid cyst of the peritoneal cavity.” 49 (4), 319–320.
- c. BHATNAGAR, B. L., 1952.—“Guinea-worm disease.” 49 (4), 327–328.
- d. SHAH, K. S., 1952.—“Filariasis of the scrotum.” 49 (5), 362–372.

(180a) Although the aetiology of filariasis is fairly well understood, the complete cure of the disease has not yet been attained. The various drugs recently used are briefly summarized. Govinda Rao has found that anthiomaline in about 50 cases gave encouraging results, nearly 80% becoming asymptomatic after a course of ten to twelve intramuscular injections of a 6% solution, 1 c.c. containing 60 mg. of anthiomaline or 10 mg. of antimony. On the first day 0.5–1.0 c.c. only is injected to ascertain the sensitivity of the patient. If there are no untoward effects the dose is increased to 3 c.c. daily and the entire course lasts from 7–28 days. The results in cases of *Wuchereria bancrofti* infections suggested that not only the microfilariae but also 80%–90% of the adult worms were killed by one course. Hetrazan has an advantage over anthiomaline in that it is effective orally, acts on the microfilariae more rapidly and is less toxic.

R.T.L.

#### 181—Archiv für Hygiene und Bakteriologie.

- a. JETTMAR, H. M. & EXNER, H., 1952.—“Beiträge zum Studium der Chemoresistenz von Ascaris-Eiern. (Über die Entwicklungshemmung der Eianlagen durch verschiedene Chemikalien.)” 136 (2), 85–96. [English summary p. 96.]

(181a) Jettmar & Exner have tested the resistance of ascaris ova (principally those of *Parascaris equorum*) to various chemicals. Ripe but unsegmented eggs were obtained from the vagina or lower part of the uterus of fresh worms and were immersed in aqueous solutions of the chemicals at 30°C. A few eggs were withdrawn and examined after varying periods. The action of 17 inorganic and 28 organic substances was tested in addition to that of vegetable fat, lard, butter and fish-liver oil. Of the inorganics, potassium cyanide, tin chloride, Lugol's solution and carbon tetrachloride were particularly harmful to egg development: mercuric chloride had no detrimental effect even in high concentrations but it was toxic when the outer shell had been dissolved by acids. Of the organics, phenols and filtered aniline water were harmful, the latter even at dilutions of 1:64.

A.E.F.

#### 182—Archives de l'Institut Pasteur d'Algérie.

- a. SIMONET, P., 1952.—“Observations nouvelles sur la pathologie des indigènes dans l'annexe de la Saoura (Beni Abbès, Sud Oranais).” 30 (2), 134–145.

(182a) Simonet reports a new focus of *Schistosoma haematobium* in seven villages south of Beni Abbès, Department of Oran. The percentage of infection in the different villages varied from 3.5% to 74%; men and women were equally infected but the percentage of infection in children was 60% whilst in adults it was only 47%. He describes the geography of the region, the clinical findings, symptomatology, prophylaxis and control, and lists the species of snails, of which *Bulinus contortus* was the most common, collected in the locality. s.w.

**183—Archives of Ophthalmology.**

- a. PARSONS, H. E., 1952.—“Nematode chorioretinitis. Report of a case, with photographs of a viable worm.” 47 (6), 799–800.

(183a) Three photographs, taken by a retinal camera, illustrate clinical notes on the occurrence of an active worm considered to be an immature ascaris underlying a fork in the retinal vascular system just below the macula which was almost completely destroyed. R.T.L.

**184—Archives of Pathology.**

- a. JAKES, W. E., 1952.—“Relationship of nematode larvae to generalized sarcoidosis. Report of a case and review of the literature.” 53 (6), 550–557.  
b. JAKES, W. E., 1952.—“Sarcoidosis. A review and a proposed etiologic concept.” 53 (6), 558–592.

(184a) Biopsy of the skin of a slightly raised, indurated rash in the perinaeum of a 14-year-old girl resulted in a diagnosis of sarcoidosis. Histological examination showed doubly refractile laminated structures, each with a central eosinophilic tubular structure, forming Schaumann bodies (which are illustrated by four photomicrographs). These structures were thought by Augustine to be larvae of *Strongyloides stercoralis*. The published helminth literature bearing on sarcoidosis is briefly summarized. R.T.L.

(184b) Granulomatous lesions which cannot be specifically catalogued have frequently been classed as sarcoidosis. Jakes is of the opinion that those in which tubercle bacilli have been identified, those with caseation necrosis and those caused by talc, beryllium phosphors, silicates and other foreign bodies should be excluded. Generalized sarcoidosis must be differentiated from focal sarcoid lesions. He believes that sarcoidosis results from an altered capacity of the host to react to unidentified antigenic substances among which are those produced by nematode infections. R.T.L.

**185—Archivos de Medicina Infantil.**

- a. BASNUEVO, J. G. & BORGES HERNÁNDEZ, F., 1952.—“Tratamiento de la tricocefaliosis con hexilresorcinol (santokín) en forma de enemas. (Reporte de cuatro casos curados.)” 21 (1), 47–59. [English summary p. 58.]

(185a) [This paper has been reprinted from *Rev. Kuba Med. trop.*, 1951, 7, 86–92. For abstract see *Helm. Abs.*, 20, No. 554g.]

**186—Archivos de Pediatría del Uruguay.**

- a. PALMA, E. C., 1952.—“Angiografía cerebral en el diagnóstico del quiste hidático intracraneano. Contribución a su tratamiento quirúrgico.” 23 (1), 18–29.  
b. PALMA, E. C., PELUFFO, E., BAZZANO, H. C. & BELTRAN, J. C., 1952.—“Quiste hidático del cerebro en un niño de 3 años. Técnica operatoria y resultados.” 23 (2), 102–115. [English summary pp. 114–115.]

**187—Auburn Veterinarian. Alabama.**

- \*a. OTTO, G. F., 1952.—“The treatment of canine filariasis.” 8, 69–75.  
\*b. THRELKELD, W. L. & BELL, W. B., 1952.—“Ostertagiasis in Virginia.” 8, 137–140.

**188—Australian and New Zealand Journal of Surgery.**

- a. SUSMAN, M. P., 1952.—“Hydatid cyst of the lung. Two unusual cases.” 21 (4), 297–299.

**189—Bimonthly Bulletin. North Dakota Agricultural Experiment Station.**

- a. GOLDSBY, A. I., 1952.—“Internal parasites in North Dakota cattle.” 14 (5), 203–204.

(189a) Only sub-clinical cases of intestinal helminthiasis, of which haemonchiasis is the most frequent, have so far been observed in cattle in North Dakota, but these are a potential danger and may cause losses with changes in farming methods, e.g. from the range type of grazing to pasture ranching, or the introduction of irrigation. R.T.L.

**190—Boletín de Informaciones Parasitarias Chilenas.**

- a. ANON., 1952.—“Campanas antiparasitarias en Chile.” 7 (1), 13.
- b. FANTA N., E., 1952.—“Parasitismo humano por *Dipylidium caninum* (Linneo, 1758). (Resumen de un caso.)” 7 (2), 29.
- c. FAIGUENBAUM A., J., 1952.—“Sintomatología de la ascariasis.” 7 (2), 29-30.
- d. NEGHME R., A. & SILVA C., R., 1952.—“Trichostrongylidae en Chile.” 7 (3), 39-40. [English summary p. 40.]
- e. DÍAZ C., E. & MUÑOZ G., A., 1952.—“Manifestaciones alérgicas de algunas parasitosis intestinales.” 7 (3), 40-41. [English summary p. 41.]
- f. BERGENFREID, A. & FANTA N., E., 1952.—“Ascitis quílosa de origen hidatídico. Resumen de un caso.” 7 (3), 43-44.
- g. GÜEMES R., M., 1952.—“Primer caso comprobado en Chile de teniasis por *Hymenolepis diminuta*.” 7 (3), 44.
- h. FAIGUENBAUM A., J., 1952.—“Diagnóstico y tratamiento de la ascariasis.” 7 (3), 45-46.

(190d) Thirty-seven cases of trichostrongylid infection in man are reported from Chile. Twenty-seven of these occurred in the province of Cantin and seven in the province of Valdivia. The identifications were based on the ova found in the faeces but a specimen from one case has been provisionally identified as *Haemonchus contortus* by Dr. I. Tagle. R.T.L.

(190e) Clinical studies support the view that most of the allergic symptoms arising from intestinal helminthiasis due to *Ascaris*, *Enterobius* and *Trichuris* are cured or markedly improved by anthelmintic treatment. R.T.L.

(190h) At Así in the Chilean province of Chiloé, 60% of the population have *Ascaris lumbricoides* ova in their faeces. Associated with migration of the ascaris larvae are acute pneumonia with fugitive shadows on X-ray examination, fever and eosinophilia. Current methods of treatment with cystoids of hexylresorcinol, santonin and hetrazan are briefly mentioned. R.T.L.

**191—Boletín Informativo. Chinchiná, Colombia.**

- a. GONZÁLEZ MENDOZA, R., 1952.—“Especialización de los nemátodos de las raíces de café, guamo (*Inga*) y plátano.” 3 (29), 34-37.

(191a) González Mendoza has infested three large boxes of eelworm-free soil with root-knot material from coffee and from the shade trees “guamo” and plantain respectively, and then grown seedlings of the three trees in replication in each box. Results show that coffee became heavily infested in all three, plantain slightly, and guamo not at all. He concludes that treatment could well be restricted to the immediate area where the coffee trees are planted, and that the condition known as “slow growth” of guamos cannot be ascribed to root-knot. In the course of weeding it was found that *Ageratum conyzoides* and *Spananthe paniculata* were galled. B.G.P.

**192—Bonner Zoologische Beiträge.**

- a. GUNHOLD, P., 1952.—“Über die in Kompost lebenden Nematoden.” 3 (1/2), 151-166.

(192a) Gunhold reports on a study of the nematodes occurring in compost heaps, particularly on the succession of nematode genera and species during the process of ageing of the heaps from the fresh condition to 3-4 years old. He briefly discusses the part played by nematodes in the natural processes of putrefaction and decay pertaining in compost heaps, lists all the genera and species found by him and describes and figures the following species new to science: *Diplogaster paesleri* n.sp., *D. subdentatus* n.sp. and *Plectonchus extrematus* n.sp. T.G.

**193—Brain.**

- a. BICKERSTAFF, E. R., CLOAKE, P. C. P., HUGHES, B. & SMITH, W. T., 1952.—“The racemose form of cerebral cysticercosis.” 75 (1), 1-18.

**194—British Agricultural Bulletin.**

- a. GRAINGER, J., 1952.—“The menace of potato root eelworm.” 5 (21), 131–137.

**195—British Journal of Pharmacology and Chemotherapy.**

- a. MACKIE, A. & RAEBURN, J., 1952.—“The effect of some oxidation products of phenothiazine on liver fluke (*Fasciola hepatica*) in vitro.” 7 (2), 215–218.  
b. MACKIE, A. & RAEBURN, J., 1952.—“The influence of groups in the molecule of 2:3-dihydro-3-ketobenzo-1:4-thiazine on its effect on liver fluke (*Fasciola hepatica*) in vitro.” 7 (2), 219–222.

(195a) *In vitro* experiments with phenothiazine oxidation products on *Fasciola hepatica* have shown that phenothiazine is lethal at 1:8,000 and has a paralysing effect at 1:16,000, whereas thionol and phenothiazine sulphoxide have no lethal action and only paralysing effects at 1:1,000 and 1:4,000 respectively. The effect on the flukes was tested by means of Chance & Mansour's modification of Baldwin's kymographic technique. R.T.L.

(195b) 2:3-dihydro-3-ketobenzo-1:4-thiazine contains in its molecule certain features present in phenothiazine. It also contains a  $-\text{CH}_2\text{CO}-$  group, a characteristic of filicic acid which is the most important of the organic acids in *Filix mas*. On this account, it and a number of its derivatives were tested *in vitro* on *Fasciola hepatica* by the same technique as previously described [see preceding abstract], and were found to have paralysing effects. Their minimum effective concentrations are tabulated. R.T.L.

**196—British Veterinary Journal.**

- a. SHOHO, C., 1952.—“Further observations on epizootic cerebrospinal nematodiasis: I. Chemotherapeutic control of the disease by 1-diethylcarbamy-4-methylpiperazine citrate: preliminary field trial.” 108 (4), 134–141.  
b. SOLIMAN, K. N., 1952.—“Observations on the survival on pasture of preparasitic stages of *Dictyocaulus viviparus* in southern England. I.” 108 (5), 167–172.  
c. SOLIMAN, K. N., 1952.—“Observations on the survival on pasture of preparasitic stages of *Dictyocaulus viviparus* in southern England. II.” 108 (6), 204–213.

(196a) Shoho reviews briefly the literature dealing with (i) the efficiency of 1-diethylcarbamy-4-methylpiperazine citrate in filariid infections and (ii) the aetiology and pathology of *Setaria digitata* infection, termed “epizootic cerebrospinal nematodiasis”, in sheep, goats and horses. He reports on the prophylactic and therapeutic “filaricidal” activity of the drug in sheep, goats and horses treated in preliminary field trials in Japan. The prophylactic dosage was 40 mg. per kg. body-weight for sheep. The treatment was repeated after 20 days. The drug was dissolved in “an adequate quantity of water and given by stomach tube”. Foals received 40–60 mg. per kg. body-weight without ill effects. Five of the 633 treated sheep and 21 of the 1,339 untreated controls developed infection: 64 sheep, 4 goats and 2 foals which received curative treatment recovered. It is reported that a marked drop in microfilarial count in “carrier cattle” can be obtained within a matter of hours by a single dose of 100 mg. per kg. body-weight. P.L.ler.

(196b) Four Shorthorn steers which had been reared indoors failed to acquire infection with *Dictyocaulus viviparus* and *Haemonchus contortus* between 25th October 1950 and 1st February 1951 when grazed on a pasture two months after it had been naturally infected, but all of them acquired infections with *Trichuris ovis*. Soliman suggests a system of strip rotational grazing for periods of less than seven days provided the same strip is not grazed again for at least two months. R.T.L.

(196c) Soliman describes the results of three experiments designed to ascertain the duration and percentage rate of survival of the free-living larval stages of *Dictyocaulus filaria* and *D. viviparus* on outdoor grass plots. The percentage recovery of first-stage larvae fell below one after a fortnight and of third-stage larvae below this level after three weeks. No third-stage larvae of *D. filaria* were recovered after 35 days' exposure or of *D. viviparus* after

28 days. The recovery figures are only regarded as a minimum estimation of the survival rate under the conditions of the exposure and with the technique employed. R.T.L.

**197—Bulletin de l'Académie Vétérinaire de France.**

- a. RAUST, R., 1952.—“Cysticerose du veau.” 25 (3), 113-114. [Discussion pp. 114-115.]

(197a) Raust reports that 9 out of 1,309 calves examined in the abattoirs in Rouen between 21st January and 1st March, 1952, were infected with *Cysticercus bovis*. S.W.

**198—Bulletin. Kentucky Agricultural Experiment Station.**

- a. VALLEAU, W. D., JOHNSON, E. M. & DIACHUN, S., 1952.—“Tobacco diseases.” No. 581, 62 pp. [Revision of Bulletin 437.]  
b. TODD, A. C., 1952.—“Control of strongyle parasites in horses.” No. 582, 22 pp.

**199—Bulletin du Muséum (National) d'Histoire Naturelle. Paris.**

- a. URBAIN, A., NOUVEL, J. & RINJARD, J., 1952.—“Trichinose d'un ours blanc (*Thalassarcos maritimus* Desm.) en captivité depuis plus de 16 ans.” 2e Série, 24 (2), 204-205.

(199a) Urbain *et al.* report that post-mortem examination of a polar bear which had been kept in captivity for more than 16 years revealed wide-spread infection with *Trichinella spiralis*. It is almost certain that the bear became infected before being brought into captivity as its diet in the Zoological Gardens precluded infection and it was never seen to chase or eat rats. When the encapsulated *Trichinella* larvae obtained from it were fed to rats and mice in the laboratory, these animals became infected. S.W.

**200—Bulletin de la Société de Pathologie Exotique.**

- a. COUTELEN, F., BIGUET, J., OBEZ, A. & LEFRANÇOIS, R., 1952.—“Remarques sur l'emploi, contre l'oxyurose, de l'ester thymolique de l'acide  $\alpha$ -isométhylcarbamique.” 45 (4), 465-469.  
b. ROUSSELOT, R. & PELLISSIER, A., 1952.—“Pathologie du gorille (1re note).” 45 (4), 565-568.  
c. ROUSSELOT, R. & PELLISSIER, A., 1952.—“Pathologie du gorille (2e note). III. Oesophagostomose nodulaire à *Oesophagostomum stephanostomum* du gorille et du chimpanzé.” 45 (4), 568-574.

(200a) To test the efficacy of Egressin for the treatment of enterobiasis 20 boys in an institution were divided into three groups. Of ten boys who received 1 gm. of Egressin twice daily for three days, followed on the third day by a purgative, six were cured and four showed an improvement. In five cases where the anthelmintic was given without a purgative far fewer adult worms were passed. In the remaining five who received only the purgative there was no improvement. Severe toxic effects, including repeated vomiting, nausea and headache, occurred in over one-third of the cases. In another institution the results were discouraging. P.M.B.

(200b) This first note on the pathology of the gorilla deals with (i) microbic skin lesions and (ii) green diarrhoea. It contains two sets of text figures illustrating the anterior end, bursa, female tail and ovum of *Oesophagostomum stephanostomum* which forms the subject of the note following. R.T.L.

(200c) In the wild state gorillas become infected with *Oesophagostomum stephanostomum* when they cease to be suckled and carried by their mothers. The infection is usually of little importance. But in captivity massive infections with intermittent diarrhoea, anaemia and hepatic complications occur: these may prove fatal within 30 to 40 days after capture. The symptomatology of the acute and chronic stages and the associated lesions are described. Three young animals were restored to health by a series of three to four enemas with gonacrine, serum with glucose added, and sodium borate. But this method of treatment is inapplicable to captured animals over 18 months old. R.T.L.

## 201—Bulletin of the State Institute of Marine and Tropical Medicine, Medical Academy in Gdańsk, Poland.

- a. JIROVEC, O., 1952.—“Współczesny stan chorób pasożytniczych człowieka w Czechosłowacji.” 4 (1), 109–119. [English & Russian summaries pp. 120–125.]

(201a) In Czechoslovakia, enterobiasis is the most common helminth infection. Its great spread is attributed to air-borne dust. Ascariasis occurred in 1.4%–4%. Trichuriasis ranged from 3%–8.8% although in Slovakia, Privora (1951) recorded 36.3% in children from the neighbourhood of Košice, and Dziuban (1928) reported 67% trichuriasis and 52% ascariasis in Subcarpathian Ruthenia. Trichinosis is rare; since 1880 only 250 cases have been recorded. Infection in swine amounts to 0.002%–0.008%. *Taenia solium* is becoming rare but *T. saginata* is on the increase.

R.T.L.

## 202—Bulletin. University of Florida Agricultural Experiment Stations.

- a. KINCAID, R. R. & VOLK, G. M., 1952.—“Effects of soil fumigation on cigar-wrapper tobacco and on soil nitrogen.” No. 490, 24 pp.

(202a) Kincaid & Volk summarize four years' field experiments on controlling root-knot and “coarse root” (“a nematode root rot apparently closely related to brown root rot”) in shade tobacco, comparing D-D mixture with ethylene dibromide, applied at different times and repeated or not in successive years. [In this abstract it will be possible to mention only the main conclusions.] D-D and ethylene dibromide were highly and about equally effective in controlling root-knot but much less effective (ethylene dibromide being the better) against “coarse root”. Both diseases depress yields, fumigation leading to highly significant yield increases, maintained or increased by up to three annual repetitions but not by the 4th. Both fumigants led to increased soil ammonia for several weeks (but this led to reduced yields in late applications) and later to increased nitrate. Residual effects of fumigation were inconsistent. Data are included on grade index (quality), crop index, fire-holding capacity of cured tobacco, and soil pH, and many correlation coefficients are presented.

B.G.P.

## 203—Canadian Insect Pest Review.

- a. BAKER, A. D., 1952.—“Notes on some nematode problems, 1951.” 30 (1), 118–120.

(203a) *Heterodera avenae* caused less injury in 1951 to oats in central Ontario. A fungus parasite of this nematode was observed near Conestogo, Ontario, in June 1951. *H. schachtii* on sugar-beet has increased in the Blackwell area of Ontario but has not spread beyond regions previously reported. *Ditylenchus destructor* infestations in Prince Edward Island have declined owing probably to the removal of all infested land from potato production. Other infestations recorded are *Meloidogyne hapla* from astilbe roots at Pt. Burwell, Ontario, *Aphelenchus avenae* from potato tubers and daisy roots at York, P.E.I., *Aphelenchoides parietinus* from potato tubers at Miscouche, P.E.I. and *Diplogaster* sp. from seeds of *Pinus cebennensis* at Angus, Ontario.

R.T.L.

## 204—Canadian Journal of Comparative Medicine.

- a. POOLE, J. B., 1952.—“A survey of the incidence of trichinosis in rats in B.C.” 16 (8), 291–293.  
b. McCRAW, B. M., 1952.—“Gizzard worm (*Amidostomum*) in geese.” 16 (9), 342.

(204a) During the three years 1949 to 1952 examination of the diaphragms of 2,043 rats, caught in the main centres of population of the British Columbian coast, revealed *Trichinella* in 5.8%. In 346 rats which were caught in piggeries the incidence was 21.7%, whereas in the remaining 1,697 from other sources it was only 2.6%.

P.M.B.

(204b) *Amidostomum anseris* is recorded from the gizzard of a gosling from the Burnaby district of Vancouver, B.C. There was marked necrosis of the mucosa.

R.T.L.

**205—Chemistry and Industry. London.**

- a. PETERS, B. G., 1952.—“The eelworm problem: biological aspects. Plant eelworms of the genus *Heterodera*.” Year 1952, No. 41, pp. 994–995.
- b. HEELEY, W., 1952.—“The eelworm problem: biological aspects. The chemical control of eelworms.” Year 1952, No. 41, pp. 995–998.
- c. JOHNSON, A. W., 1952.—“The eelworm problem: biological aspects. The potato eelworm hatching factor.” Year 1952, No. 41, pp. 998–999.

(205a,b,c) These three papers read before the Crop Protection Panel of the Society of Chemical Industry, summarize some of the recent work on species of *Heterodera*. (a) Peters briefly outlines the differential features of *H. marioni*, *H. schachtii*, *H. major*, *H. göttingiana* and *H. rostochiensis*. (b) Heeley deals with the chemical control, by soil fumigation, of *H. marioni* and *H. rostochiensis*; control of the former in glass-houses is regarded as presenting no practical problems. The chemical control of potato root eelworm is much more difficult and is economically justifiable, at present, only with high-value crops like early potatoes and tomatoes under glass. In some maincrop soils, D-D mixture may lead to an economic crop increase without much changing the eelworm population. (c) Johnson briefly outlines the Cambridge work on concentrating and chemically analysing the root diffusate from potatoes and tomatoes which causes the eelworm larvae to hatch.

B.G.P.

**206—Circular. Georgia Coastal Plain Experiment Station.**

- a. ANDREWS, J. S., SOUTHWELL, B. L. & JONES, D. J., 1952.—“Acquisition of parasites by swine hogging-off crops.” No. 21, 11 pp.

(206a) Andrews *et al.* report their observations in the coastal plain area of Georgia on the helminth infections of pigs which were farrowed in the spring on cultivated land and then transferred to fields of mature crops for the summer. The land where farrowing took place was continuously used for this purpose, whereas the land which was “hogged-off” had not been used for pigs before the experimental period, which covered the years 1942 to 1948. Over the seven years the average incidence of various helminths from a representative number of pigs when killed was: *Ascaris* 52%, *Macracanthorhynchus hirudinaceus* 28%, *Metastrongylus elongatus*, *Choerostongylus pudendotectus* 8%, *Oesophagostomum dentatum* 100%, *O. longicaudum* 100%, *O. brevicaudum* 69%, *Ascarops strongylina* 77%, *Physocephalus sexalatus* 52%, *Hyostrongylus rubidus* 45%, *Strongyloides ransomi* 93%, *Trichuris suis* 59%. Parasitic lesions in the liver, due to the larvae of *Stephanurus dentatus* or of *Ascaris* or both, occurred in 63%. The greatest increase in the average number of worms recovered occurred between the fourth and fifth years of the experiment, reaching a maximum of 4,249, although the percentage of pigs infected during that year showed an unexplained decrease. There was no case of clinical parasitism. The results are shown by a histogram and a table.

P.M.B.

**207—Clinica Veterinaria. Milan.**

- a. PEGREFFI, G. & QUESADA, A., 1952.—“La synthetocaulosi caprina (bronicopolmonite diffusa da larve e da uova).” 75 (2), 44–50. [English & French summaries p. 49.]

(207a) Pegreff & Quesada describe an outbreak of verminous bronchopneumonia in the form of a diffuse pneumonia caused by larvae and eggs of *Synthetocaulus rufescens*. Two herds of 200 goats each were affected and the mortality rate reached 50%–55%. However, intravenous injections with two soluble phenothiazine derivatives, thiodiphenylamine calcium disulphonate and thiodiphenylamine sodium disulphonate, at the rate of 1 c.c. solution per 5 kg. body-weight, each tested on 20 animals, resulted in clinical improvement. In two goats which were slaughtered there was a reduction of the bronchopulmonary lesions and complete disappearance of larvae and eggs. The four controls died within 12 days after the others had been treated.

P.M.B.

## 208—Comptes Rendus des Séances de la Société de Biologie. Paris.

- a. MOIGNOUX, J. B., 1952.—“Sur l'identité des deux espèces d'*Onchocerca*: *O. reticulata* Dies-1841 et *O. cervicalis* Railliet et Henry-1910. Etude biologique comparative.” 146 (7/8), 573-575.
- b. BACIGALUPO, J. & BACIGALUPO, A. D'A., 1952.—“Oeufs anormaux d'*Hymenolepis diminuta*.” 146 (7/8), 589.
- c. DASTUGUE, G. & COSTERIZANT, G., 1952.—“Action sensibilisante ou antagoniste de quelques antihistaminiques de synthèse vis-à-vis de l'acétylcholine en présence de la préparation énercée de sangsue. Comparaison avec l'atropine.” 146 (9/10), 647-649.
- d. DASTUGUE, G. & COSTERIZANT, G., 1952.—“Action favorisante de quelques dérivés de l'imidazoline vis-à-vis de l'acétylcholine en présence de la préparation énercée de sangsue.” 146 (9/10), 649-650.

(208a) Moignoux observes that *Onchocerca cervicalis* and *O. reticulata* were not differentiated on morphological characters, which are practically identical in these two species, but by the localization of the adult worms in the definitive host—the first mentioned in the cervical ligament and the second in the suspensory ligament of equines. He observes that a comparison of the various measurements of the microfilariae of the two parasites, the evolution of their microfilariae into infective stage larvae in *Culicoides* and the occurrence of the parasites show that they are morphologically and biologically identical. The more rapid development of *O. reticulata* in *Culicoides* in the Mediterranean littoral zone as compared with that of *O. cervicalis* in *Culicoides* in England is attributed to the differences of temperature at which the experimental work was conducted in these two localities. P.L.IER.

(208b) The authors describe anomalous eggs of *Hymenolepis diminuta* obtained from the faeces of an experimentally infected rat. The eggs contained embryos with twelve hooks, there being four separate central hooks, and four on each side joined at their base. S.W.

## 209—Cornell Veterinarian.

- a. KRULL, W. H. & MAPES, C. R., 1952.—“Studies on the biology of *Dicrocoelium dendriticum* (Rudolphi, 1815) Looss, 1899 (Trematoda: Dicrocoeliidae), including its relation to the intermediate host, *Cionella lubrica* (Müller). V. Notes on infections of *Dicrocoelium dendriticum* in *Cionella lubrica*.” 42 (3), 339-351.
- b. WHITLOCK, J. H., 1952.—“Mismanagement and the disease-prone lamb.” 42 (3), 403-417.

(209a) Krull & Mapes find that in *Cionella lubrica* sporocysts of *Dicrocoelium dendriticum* can be identified through the shell in 6-8 weeks; they may be generally distributed throughout the viscera or concentrated in various regions. The sporocysts do not become filled with cercariae until three months or more after the initial infection. The number of sporocysts present in the snail does not appear to affect slimeball production as a snail with as few as 46 sporocysts has been observed to produce slimeballs. S.W.

(209b) Sheep are normally extraordinarily healthy animals but under specific nutritional and environmental conditions their natural resistance is affected, e.g. by pregnancy, weaning and long distance transport. In the U.S.A., *Haemonchus contortus* and *Fasciola hepatica* are apparently the only common parasites of sheep which can produce disease without some other factor. Other infections merely give the final push to animals already debilitated. It is emphasized that management is fundamental in the control of sheep diseases. R.T.L.

## 210—Deutsche Medizinische Wochenschrift.

- a. BROCK, N., ERHARDT, A. & WILMANN, H., 1952.—“Zur Behandlung der Oxyuriasis mit Atrimon. (Carbinolbasen des Penta- und Hexamethyl-para-rosanilins.)” 77 (8), 240-242.
- b. HORNBOSTEL, H. & DÖRKEN, H., 1952.—“Die gezielte Therapie bei *Taenia saginata* (zugleich Prüfung der Atebrin-Wirksamkeit).” 77 (11), 339-341.
- c. BIELING, R., 1952.—“Seteriose—eine Nervenkrankheit; auch des Menschen?” 77 (11), 344-345.

(210a) Brock *et al.* discuss the chemistry of gentian violet, crystal violet, methyl violet and malachite green, and the relation of these dyes to Atrimon (the carbinol base of crystal violet). They summarize the work of Reinhard [see Helm. Abs., 19, No. 258a] and Schmidt &

Mendheim (*Münch. med. Wschr.*, 1950, **92**, 624-626) and show that Atrimon is effective against *Enterobius*. It has a low toxicity and can be given in relatively high doses. Critical evaluation of clinical tests has demonstrated that efficacy depends not only on dosage but on duration of treatment. This is probably explained by the fact that larvae enter the crypts of the intestinal mucosa where anthelmintics cannot reach them. Treatment must therefore be continued sufficiently long (seven to ten days) for it to act on larvae entering the intestine. A.E.F.

(210b) Hornbostel & Dörken have tested atebryn against *Taenia saginata* infection in man. After having located the parasite by means of X-ray [see No. 237a below] 0.8 gm. atebryn in 100 c.c. distilled water was introduced at a point about 20 cm. behind the scolex by means of a sound. This was followed after half an hour by 20 gm. magnesium sulphate or sodium sulphate in 15% solution. From each of the 20 males (aged 25-74 years) treated in this way the worm was removed with scolex; there were no noticeable side effects. The results with females were not so successful since vomiting occurred and interfered with treatment. Of 23 women treated (aged 18-50 years) the worm was removed from 13, in 12 cases complete with scolex. In all cases previous treatment with other drugs had been unsuccessful. The authors consider atebryn to be a safe and efficacious remedy for *Taenia saginata* infection although it should not be given to women with increased sensitivity or suffering from gall-bladder disease, ulcers or other disease of the upper abdomen, or thyrotoxicosis. Neither should it be given to children. A.E.F.

(210c) Bieling suggests that the possibility of human infection with *Setaria digitata* should not be overlooked. He bases his observations mainly on a paper by Innes in *Brit. vet. J.*, 1951, **107**, pp. 187-203 [for abstract see *Helm. Abs.*, **20**, No. 190a] and on an unpublished report by Innes & Shoho. When *S. digitata*, normally a parasite of cattle, infects unusual hosts (e.g. goats, sheep, horses) it often penetrates into the central nervous system and the first neurological symptoms appear after about a month. Bieling considers that the same thing may happen in man. A.E.F.

## 211—Deutsche Pelztierzüchter (Der).

- a. KELLER, H., 1952.—“Trichinen bei Sumpfbibern und Kaninchen.” **26** (2), 28-29.

(211a) Keller recalls an outbreak of trichinellosis in Switzerland in 1936 traced to consumption of trichinous nutria flesh: this led to obligatory inspection of nutria intended for human consumption. Experiments carried out by Wundram in 1940 proved that nutria will voluntarily eat pig meat and can therefore become infected with *Trichinella*. Keller describes his own experiments which showed that rabbits will eat flesh. Of 27 rabbits tested, 11 voluntarily ate meat and four became infected with *Trichinella*. This brings rabbits and hares within the category of possible transmitters of *Trichinella* to man, although no case of infection in wild hares or rabbits has yet been reported. To prevent such infections, carcasses of wild animals should be deeply buried and flesh intended for animal feeding should be thoroughly cooked. A note appended by Zieske maintains that the Swiss outbreak of *Trichinella* caused by nutria was due to a combination of abnormal circumstances not likely to occur again and that obligatory inspection of these animals, or of rabbits and hares, is unnecessary. A.E.F.

## 212—Diseases of the Chest.

- a. ZAKY, H. A., 1952.—“Aneurysm of the pulmonary artery due to schistosomiasis.” **21** (2), 194-204. [French & Spanish summaries pp. 202-203.]

## 213—Dokladi Akademii Nauk SSSR.

- a. LOGACHEV, E. D., 1952.—[Specific form of amitosis of subcuticular cells in Cestoda.] **82** (1), 175-176. [In Russian.]  
b. KRASTIN, N. I., 1952.—[The life-cycle of the nematode *Thelazia skrjabini* Ershov, 1928, ocular parasite in cattle.] **82** (5), 829-831. [In Russian.]

- c. MIRETSKI, O. Y., 1952.—[The development of eggs of human *Ascaris* in various parts of the visible spectrum.] 82 (6), 1021-1024. [In Russian.]
- d. CHUBRIK, G. K., 1952.—[The life-cycle of *Proisorhynchus squamatus* Odhner, 1905.] 83 (2), 327-329. [In Russian.]
- e. LOGACHEV, E. D., 1952.—[Desmoplastic series of cell elements of the connective tissue (parenchyma) in tapeworm.] 83 (2), 331-334. [In Russian.]
- f. MOZGOVOI, A. A., 1952.—[The life-cycle of *Porrocaecum crassum*, nematode of aquatic birds.] 83 (2), 335-336. [In Russian.]
- g. CHUBRIK, G. K., 1952.—[The life-cycle of *Rhodotrema quadrilobata* Basikalova, 1932, a parasite in the intestine of pleuronectiid fishes.] 83 (6), 981-983. [In Russian.]

(213b) Krastin examined 17,900 specimens of *Musca amica* and obtained from them 223 infective larvae of *Thelazia*. Most of the larvae were identified as *T. gulosa*, but some had a very shallow buccal capsule and more uniform thickness of the body from which it was obvious that they belonged to *T. skrjabini*. He infected one of two calves with 175 of the larvae. When both calves were examined he found 10 specimens of *T. gulosa*, and one female specimen of *T. skrjabini* in the infected calf only. C.R.

(213c) In this paper Miretski gives the results of his experiments on the influence of ultra-violet light and various parts of the visible spectrum on the development of ascarid eggs and on the importance of yellow-brown pigment in the egg-shells of helminths. He used as light filters a 1% solution of potassium bichromate, which absorbs the blue-violet part of the spectrum and allows red to pass through, and a 4% solution of ammoniacal copper sulphate which absorbs the red half of the spectrum and allows ultra-violet to pass. The unpigmented eggs (from the uterus) of *Ascaris lumbricoides* were placed in a narrow tube with Barbagall solution. The tubes were placed into larger tubes either with potassium bichromate or ammoniacal copper sulphate solution. They were cultured at room temperature in diffused light and in direct sunlight. The eggs kept in diffused light in potassium bichromate developed more rapidly than those in ammoniacal copper sulphate. Of those cultures placed in direct sunlight and in potassium bichromate 80% reached the infective stage, while of those in ammoniacal copper sulphate 93.4% reached only the 1 to 4 cell stage, and 6.6% achieved the 8 to 16 cell stage. 91.3% of the controls placed in the shade reached the infective stage. According to Miretski the pigmented shell of the egg protects the embryo from the destructive action of both the ultra-violet and the violet rays of the visible part of the spectrum. C.R.

(213d) Chubrik concludes that the cercariae found in *Mytilus edulis* and the metacercariae found in *Liparis liparis* are the intermediate stages of the bucephalid fluke *Proisorhynchus squamatus* found in *Myoxocephalus scorpius*. The cercaria, metacercaria and adult are figured. C.R.

(213e) This paper deals with the histogenetic relationship of the desmoplastic series of the cell elements of the parenchyma in the process of development of young, mature, and gravid proglottides of *Raillietina urogalli*. C.R.

(213f) Mozgovoi found that the eggs of *Porrocaecum crassum*, when cultivated at 22°C.-32.5°C. on moist filter paper, developed larvae which after a few days moulted inside the egg. He fed these eggs to twelve ducks but with negative results, the eggs being passed by the ducks unchanged. He also fed infective eggs of *Porrocaecum crassum* to various insects, fish, snails, crustaceans but without result. Eventually he found that the intermediate host was the earthworm. The infective eggs when eaten by the earthworms, hatch in the intestine and migrate into blood vessels (mainly the longitudinal blood vessel) where they moult, possibly twice, and grow considerably in size finally becoming infective. [He does not give the exact time required.] When the earthworms are eaten by ducks the larvae are liberated and enter the submucosa of the gizzard which they leave after seven days; they then pass into the small intestine and in three weeks grow to maturity. C.R.

(213g) Chubrik, examining the molluscs *Solariella varicosa* and *S. obscura* for parasites, found larvae closely resembling the adult of *Rhodotrema quadrilobata* described by Basikalova from *Platessa platessa*. He gives a detailed description and measurements of the sporocysts,

and cercariae which are characterized by the presence of partly developed testes and ovary. Chubrik fed these cercariae to a fish called in Russian "saida" [the scientific name is not given]. The young forms which developed were similar to those found in *P. plattessa*. Additional hosts are *Pleuronectes flesus*, *Limanda limanda* and *Hippoglossoides platessoides*. C.R.

#### 214—*Empire Journal of Experimental Agriculture*.

- a. SPEDDING, C. R. W., 1952.—"The effect of a sub-clinical worm-burden on the live-weight gain of sheep at pasture." 20 (79), 209-219.

(214a) Two experimental studies indicate that there is a negative correlation between worm burden and live-weight gain in sheep, even when the number of eggs per gramme of faeces is below 300. This may be obscured by environmental influences and birth factors. R.T.L.

#### 215—*Endeavour*. London.

- a. CAMERON, T. W. M., 1952.—"Parasitism, evolution, and phylogeny." 11 (44), 193-199.

(215a) Cameron develops the thesis put forward in his Presidential Address to the Royal Society of Canada in 1950, that the study of comparative animal parasitology can throw additional light on the evolution of the vertebrates. Illustrations are drawn from the Oxyuridae and Strongylidae and their hosts, and from the cestodes of birds. R.T.L.

#### 216—*FAO Plant Protection Bulletin*. Rome.

- a. ALLISON, J. L., 1952.—"Diseases of economic plants in Iraq." 1 (1), 9-11.

(216a) From preliminary surveys of plant diseases in Iraq and from earlier records, the common diseases known to attack plants of economic value in Iraq are summarized. Among these, mention is made of *Tylenchus tritici* [*Anguina tritici*] in wheat, *Meloidogyne* spp. in lettuce, tomato, eggplant, okra, watermelon, muskmelon, cucumber and squash, fig, almond and sesame. Most of these crops are grown under irrigation and the infections are of minor importance at present. R.T.L.

#### 217—*Glasgow Medical Journal*.

- a. JAMES, T., 1952.—"A case of triple infestation with *Trichuris trichiura*, *Ascaris lumbricoides* and *Enterobius vermicularis*." 33 (5), 188-189.

#### 218—*Indian Farming*.

- a. VASUDEVA, R. S. & HINGORANI, M. K., 1952.—"Tannan or tundu disease of wheat." 2 (3), 14, 19.

(218a) Tannan is a serious disease of wheat in Delhi State and in parts of Punjab, Rajasthan and Uttar Pradesh. It is caused by a bacterium (*Corynebacterium tritici*) which requires the presence of the nematode *Anguillulina* [*Anguina*] *tritici* before it can attack the plant. The symptoms are described and the method of spread by means of galls or cockles, containing both nematodes and bacteria, which are produced in place of grain. The disease can be controlled by floating out these cockles in water immediately before sowing the seed. M.T.F.

#### 219—*Indian Journal of Medical Sciences*.

- a. DE SA, A. E. & KOTHARE, S. N., 1952.—"Generalised cysticercosis. A case report." 6 (1), 78-81.  
b. PATEL, J. C., 1952.—"Chyluria. A report of two cases treated with sodium pentavalent antimony gluconate." 6 (5), 318-320.

(219b) Two cases of chyluria, in which there were microfilariae present in the urine, were cured by injections of sodium pentavalent antimony gluconate. The dose in one case was 15 c.c. twice daily for 21 days. The other received 20 c.c. twice daily intramuscularly for 14 days. R.T.L.

**220—Indian Medical Gazette.**

- a. CHAND, D., 1952.—"Hookworm disease in Sirmur district (Himachal Pradesh). A report of 100 cases." 87 (4), 142-145.

(220a) The Sirmur district, recently incorporated into the State of Himachal Pradesh, lies in the outer Himalayan Ranges. It is mountainous with deep valleys and is fairly humid. A large number of patients from the mofussil areas have gastro-intestinal complaints, particularly epigastric and periumbilical pain, dyspepsia and diarrhoea with anaemia and oedema. One hundred cases were found to be suffering from ancylostomiasis although this disease has not previously been reported in this area.

R.T.L.

**221—Indian Veterinary Journal.**

- a. INNES, J. R. M., 1952.—"Cerebro-spinal nematodiasis: a nervous disease of animals caused by immature nematodes (*Setaria digitata*) and its relationship to kumri of horses in India." 29 (2), 81-86.  
 b. RAMANUJACHARI, G. & ALWAR, V. S., 1952.—"*Thelazia bubalis* n.sp. from an Indian buffalo (*Bos bubalis*)." 29 (2), 97-100.  
 c. ANON., 1952.—"Cerebro-spinal nematodiasis." [Editorial.] 29 (2), 115-117.

(221a) This article summarizes for the benefit of Indian veterinarians a paper on cerebrospinal nematodiasis by Innes, Shoho & Perumal Pillai published in the *Brit. vet. J.*, 108, 71-88 [for abstract see *Helm. Abs.*, 21, No. 70a] in which it was suggested that this disease may be analogous to kumri. Years ago many veterinarians in India believed that there was some association between ocular filariasis and kumri. Innes *et al.* consider that the worms might travel into the eye through the optic foramen and that ocular filariasis may be an extension only of the cerebrospinal nematodiasis complex.

R.T.L.

(221b) *Thelazia rhodesii* is the only species of the genus hitherto recorded in bovines in India. *T. bubalis* n.sp. from a conjunctival abscess in a six-month-old buffalo calf from the Nellore district, Madras State, differs from *T. rhodesii* (i) in length, the male being 6 mm. long and the female 6.5 mm. to 7.8 mm. long, (ii) in that the cuticular annulations are extremely fine and (iii) in that the cup-shaped buccal capsule is widest at the anterior end. It differs from *T. gulosa* in the position of the vulva, and from *T. callipaeda* in the shape of the buccal capsule and in the measurements of various structures. A table sets out the distribution and morphological characters of the nine species of *Thelazia* now known.

R.T.L.

**222—Journal of the American Veterinary Medical Association.**

- a. BATCHELDER, R. M., 1952.—"The extent of parasitic damage to livers of swine from four southern States." 121 (907), 292-295.

(222a) Of 33,655 pig livers examined at three federally inspected abattoirs in south-eastern Virginia over a period of twelve months, 65.8% were condemned and 12.9% were trimmed for damage due mainly to ascarids and kidney worms. The estimated loss resulting annually from condemnations was \$168,237.

R.T.L.

**223—Journal of the Chemical Society. London.**

- a. MACKIE, A. & RAEBURN, J., 1952.—"Preparation of 2:3-dihydro-3-ketobenzo-1:4-thiazine derivatives as possible anthelmintics." Year 1952, pp. 787-790.  
 b. HAMMICK, D. L. & MUNRO, D. C., 1952.—"A new synthesis of 1-amino-4-methylthioxanthone and of miracil D." Year 1952, pp. 1077-1080.  
 c. GUNSTONE, F. D. & HEGGIE, R. M., 1952.—"Experiments on the synthesis of santonin. Part I. The preparation of the lactone of  $\alpha$ -(2-hydroxy-3-ketocyclohexyl) propionic acid." Year 1952, pp. 1354-1358.  
 d. GUNSTONE, F. D. & HEGGIE, R. M., 1952.—"Experiments on the synthesis of santonin. Part II. The preparation of compounds containing the dienone system present in santonin." Year 1952, pp. 1437-1442.

**24—Journal of the Christian Medical Association of India, Pakistan, Burma and Ceylon.**

- a. HALL, S., 1952.—“A case report of an interesting extraneous shadow in a skiagram of the chest—a calcified guinea worm.” 27 (1), 23-24.

**25—Journal of the Elisha Mitchell Scientific Society.**

- a. LARSH, Jr., J. E., GILCHRIST, H. B. & GREENBERG, B. G., 1952.—“A study of the distribution and longevity of adult *Trichinella spiralis* in immunized and non-immunized mice.” 68 (1), 1-11.  
b. HENDRICKS, J. R., 1952.—“Studies in mice on the dual antibody basis of acquired resistance to *Trichinella spiralis*.” 68 (1), 12-26.

(225a) Mice, both immunized and non-immunized, were infected with 200 *Trichinella* larvae when five months old. Within five days thereafter, there was a striking reduction in the number of *Trichinella* in the anterior half of the small intestine of the immunized mice, whereas this period was extended to 14 days in the non-immunized mice, the maximum difference occurring on the seventh day. The worm distribution in the large intestine was similar in the two groups, but the peak for the non-immunized mice was a week later than for the immunized mice. From the discussion it would seem that the anterior half of the small intestine of the mouse is the site most active in acquired resistance. R.T.L.

(225b) By using *Trichinella spiralis* larvae which had been exposed to 3,700 roentgen units to prevent their reaching sexual maturity, Hendricks was able to produce “adults” only infections in mice. In a series of experiments with these, normally infected and non-infected mice, he has studied the resistance produced by the two types of infections and the resultant larval and adult antibody titres following one to six stimulating infections. After one stimulating infection no acquired resistance was developed in spite of the presence of low adult and larval antibody titres. Mice stimulated with normal larvae became more resistant than those stimulated with irradiated larvae; the adult and larval antibody titres in both groups increased with the number of stimulating infections but although the adult antibody titre was almost the same in both groups, the larval antibody titre was lower in the mice exposed to irradiated larvae. A modification of the Baermann apparatus which was used for the collection of adults from rats which had been previously infected with irradiated larvae, is illustrated. S.W.

**26—Journal of Experimental Biology.**

- a. SMYTH, J. D., 1952.—“Studies on tapeworm physiology. VI. Effect of temperature on the maturation *in vitro* of *Schistocephalus solidus*.” 29 (2), 304-309.

(226a) Smyth has cultured 10 plerocercoids of *Schistocephalus solidus* in horse serum plus 1% glucose at each of the following temperatures: 40°C., 35°C., 34°C., 33°C. and 30°C. At 40°C. maturity was reached in 1½ days, spermatogenesis was normal and embryonated eggs were produced; at 35°C. three days were taken to reach maturity, spermatogenesis was mainly normal and embryonated eggs were produced; at 34°C. and 33°C. three and five days respectively were taken to mature, eggs were abnormal and not embryonated and the spermatocytes and spermatid morulae were abnormal; at 30°C. the plerocercoids never reached maturity and even after 29 days, spermatogenesis had not proceeded beyond early abnormal spermatid morulae. The low temperatures did not cause abnormalities to appear in the vitellaria or ovaries. S.W.

**27—Journal of the Faculty of Medicine of Baghdad, Iraq.**

- a. WATSON, J. M., 1952.—“Studies on bilharziasis in Iraq. Part VII. Further observations on incidence in the City of Baghdad.” 16 (1), 1-24.

(227a) In the City of Baghdad a urine survey which was confined to 242 male hut-dwellers and 285 schoolboys, showed eggs of *Schistosoma haematobium* at a single examination in 46%

of the former and 25% of the latter. Most of the hut-dwellers lived close to water in which snail vectors were abundant, and many were in daily contact with infected waters. Tables give the incidence by occupations and suburban areas. A snail survey showed a high incidence of infection in the Bab el Sheikh, Asimah and Kolat districts. All the *Bulinus* colonies found were on the east bank of the Tigris with a single exception at Washash. Schistosomiasis is a social rather than an occupational disease; the incidence in the poorer classes is higher than in those better off financially. The recent increase in the infection is attributed to an increase in the population. In the inhabited area there is a vast system of irrigation channels which water the gardens and parks of the city. Preventive measures suggested are: sustained anti-mollusc measures during summer and autumn; alteration and reconstruction of irrigation channels which should be lined, covered in or re-routed underground, and the rate of flow of the water should be increased; elimination by drainage or filling in of swamps, pools and excavations; provision of adequate sanitation and of a filtered water supply to all primitive dwellings, and provision of safe bathing places for children; compulsory urine examination and treatment of infected individuals; propaganda. R.T.

## 228—Journal of the Marine Biological Association of the United Kingdom.

- a. HUTTON, R. F., 1952.—“Studies on the parasites of *Cardium edule* L.: *Cercaria fulbrighti* n.sp., a *Gymnophallus* larva with a forked tail.” 31 (2), 317–326.

(228a) Hutton illustrates *Cercaria fulbrighti* n.sp. found by him at Plymouth, England in five out of 420 cockles (*Cardium edule*). He differentiates it from all previously described fork-tailed cercariae by the peculiarity that its tail degenerates while still within the sporocyst. It resembles *Cercaria dichotoma* but differs in its proportions and in the arrangement of the caudal excretory vessels. Presumably it develops into a member of the genus *Gymnophallus*. A phylogenetic relationship between the *Gymnophallus* group and certain furcocercoid cercariae is suggested. The ten larval trematodes recorded as parasitic in *Cardium edule* are tabulated. R.T.

## 229—Journal Médical Libanais.

- a. WATSON, J. M., 1952.—“Distribution, importance and prevention of urinary bilharziasis in the valley of the Tigris and Euphrates rivers.” 5 (1), 13–29.  
b. KUNTZ, R. E., 1952.—“Molluscicide studies in the laboratory and in the field.” 5 (1), 46–53.  
c. JIDEJIAN, Y., 1952.—“Hydatid disease.” 5 (1), 59–63.

(229a) Watson summarizes his experience of schistosomiasis haematobia in the Tigris and Euphrates regions. The endemic area is mostly in Iraq but extends along the Euphrate into Syria and into the Khuristan province of Iran. The vector is *Bulinus truncatus*, which begins to reproduce on a large scale when the water temperature reaches 25°C. about the end of May, and reaches its peak of abundance in July. This mollusc survives the cold winter by burying in the mud. The emergence temperature for the cercariae is probably 18°C.–19°C. From December to April there is no risk of infection and in a normal season the dangerous period ends in October. Although widely distributed throughout the basins of these rivers *B. truncatus* is local in incidence. It is not easy to find even at the period of maximum abundance and its distribution is intimately related to the nature of the irrigation system. Schistosomiasis is a social rather than an agricultural disease. At Tel Mohammed, near Baghdad, where the population is engaged in non-agricultural work the incidence is 80% whereas in the rice-growing area south of Kufa the infection is light as the molluscs are widely scattered. Although the temperature and climate of the northern part of the Tigris-Euphrate basin are very suitable, *B. truncatus* is apparently absent. The vast new irrigation scheme planned there will inevitably add to the extent and gravity of the schistosome problem. R.T.

(229b) Laboratory and field studies by the U.S. Naval Medical Research Unit at Cairo indicate that in concentrations of three to five parts per million, dinitro-*o*-cyclohexylphenol (DCHP) is lethal to most of the vectors of *Schistosoma haematobium* and *S. mansoni*, whereas

under comparable conditions 15 to 30 p.p.m. of copper sulphate are required. DCHP is not affected adversely by aquatic vegetation or heavy suspensions of organic material. Two to four weeks after application it will kill a high percentage of the snails in 24 hours and is much more ovicidal than copper sulphate. It is not sufficiently toxic to aquatic flora or invertebrates to cause biological imbalance and although poisonous to fish, this in Egypt is of little account as the fish population is soon restored. DCHP is more expensive than copper sulphate, but is easy to apply. That elevation of temperature increases the lethal action of molluscicidal substances is an important factor which has been overlooked in the planning of economic and efficient snail control.

R.T.L.

(229c) In this address on the symptomatology, complications, prophylaxis and treatment of hydatid, Jidejian states that the disease is very common in the Lebanon. Of 174 cases seen by him at the American University of Beirut, 101 were Lebanese, 39 Syrians, 20 Iraqis, 10 Palestinians; three cases were from Turkey, and one from Rumania.

R.T.L.

### 230—Journal of Parasitology.

- a. TUGWELL, R. L. & ACKERT, J. E., 1952.—“On the tissue phase of the life cycle of the fowl nematode *Ascaridia galli* (Schränk).” 38 (4, Sect. 1), 277–288.
- b. HUSSEY, K. L., SHOOKHOFF, H. B. & STERMAN, M. M., 1952.—“An anomalous tapeworm from man.” 38 (4, Sect. 1), 305–307.
- c. HUNTER, W. S., 1952.—“Contributions to the morphology and life-history of *Gynaecotyla adunca* (Linton, 1905) (Trematoda: Microphallidae).” 38 (4, Sect. 1), 308–314.
- d. GIBSON, C. L. & ASCOLI, W. F., 1952.—“The relation of *Culicoides* (Diptera: Heleidae) to the transmission of *Onchocerca volvulus*.” 38 (4, Sect. 1), 315–320.

(230a) When infected with *Ascaridia galli*, chickens under a month old show symptoms of weakness which are most marked during the 10th to 17th days after infection. At this period the larvae are within the intestinal mucosa. Tugwell & Ackert have studied this tissue phase in great detail and find that it may begin as early as the 1st day or as late as the 26th day after infection, but in most cases the larvae remain in the tissues from about the 8th to the 17th day. Until the 14th day there is no appreciable difference in the growth rates of the larvae in the mucosa and of those in the lumen but afterwards the larvae in the mucosa show little or no growth and ingest little if any food. Anthelmintic treatment is most effective if given at monthly intervals during the first three months.

R.T.L.

(230b) A tapeworm, passed by a Mexican woman, lacked external segmentation and genital pores. Irregularly arranged, close to both lateral margins and on both surfaces, there were numerous papilla-like structures with no apparent connection with any internal structure. There was no evidence of internal segmentation. Well developed testes occurred in the anterior portion only. There were irregularly arranged uterine branches without eggs. That the tapeworm was an abnormal *Taenia* was supported by serological reactions.

R.T.L.

(230c) Metacercariae tentatively identified as *Gynaecotyla adunca*, found encysted in the fiddler crab (*Uca pugilator*), when fed to nestling skimmers and terns gave rise to adults of *G. adunca*. These formed the basis of a redescription of this species, special emphasis being placed on the complex genital guide within the genital atrium. The cuticular plates on the muscular genital guide, cirrus and metraterm are considered to be of diagnostic importance.

R.T.L.

(230d) Of the four anthropophilic *Culicoides* found in the San Pedro Yepocapa region of the onchocerciasis zone in Guatemala, none was found to be naturally infected. When fed on a heavily infected *Onchocerca* patient, *Culicoides paraensis* proved incapable of ingesting the microfilariae; none was ingested by *C. gibsoni* but only ten flies were available for the experiment; 19% of *C. stigmatalis* became infected but there was no perceptible development and the infected flies died rapidly; of 47 *C. guttatus* only one became infected. Owing to their rarity, *C. guttatus* and *C. gibsoni* are unlikely to be concerned in the spread of *Onchocerca volvulus* in Guatemala.

R.T.L.

## 230—Journal of Parasitology (cont.)

- e. DEWITT, W. B., 1952.—“*Pomatiopsis lapidaria*, its occurrence in the Washington, D.C. area and its laboratory rearing in comparison to that of *Oncomelania* spp.” 38 (4, Sect. 1), 321-326.
- f. VERNBERG, W. B., 1952.—“Studies on the trematode family Cyathocotylidae Poche, 1926, with the description of a new species of *Holostephanus* from fish and the life history of *Prohemistomum chandleri* sp.nov.” 38 (4, Sect. 1), 327-340.
- g. NEILAND, K. A., 1952.—“Helminths of northwestern mammals. Part II. *Oligorchis nonarmatus* n.sp. (Cestoda: Hymenolepididae) from the yellow-bellied squirrel.” 38 (4, Sect. 1), 341-345.
- h. MELVIN, D. M., 1952.—“Studies on the life cycle and biology of *Monoecocestus sigmodontis* (Cestoda: Anoplocephalidae) from the cotton rat, *Sigmodon hispidus*.” 38 (4, Sect. 1), 346-355.
- i. MARTIN, W. E., 1952.—“Another annelid first intermediate host of a digenetic trematode.” 38 (4, Sect. 1), 356-359.

(230e) *Pomatiopsis lapidaria*, the only snail native to the U.S.A. which has been incriminated as a potential carrier of *Schistosoma japonicum*, has been collected from a number of localities in the area of Washington, D.C., and its habits have been studied. These are similar to those of the genus *Oncomelania* to which the natural intermediate hosts of *S. japonicum* belong. Laboratory techniques for rearing *P. lapidaria* and four species of *Oncomelania* are described.

R.T.L.

(230f) Of the 54 known species of the Cyathocotylidae, the life-histories of nine only have so far been described in detail. *Prohemistomum chandleri* n.sp. closely resembles *P. secundum* but has very unequal suckers. The tribocytic organ is not so anterior in position and the ovary is not so far posterior. It develops in sporocysts in *Pleurocera acuta*. The cercaria belongs to the “vivax” group and encysts in *Huro salmoides* and *Micropterus dolomieu*. Almost mature specimens were obtained after feeding experiments in *Natrix sipedon*. *Holostephanus icthaluri* n.sp. from the channel catfish, *Ictalurus punctatus*, resembles *H. curonensis* but the body and gonads are larger and the cirrus sac is more extensive and more muscular. The taxonomy of the family is discussed. Vernberg is of the opinion that the type of host has been unduly emphasized and rejects it as a taxonomic criterion of generic and supergeneric categories.

R.T.L.

(230g) *Oligorchis nonarmatus* n.sp. collected from *Tamiasciurus d. douglasii* near Eagle Creek, Oregon, is considered to be a hymenolepid because it has few large testes (four to six in number), a unilateral genital pore, an external seminal vesicle and short, broad proglottides. The scolex is unarmed. The position of *Pseudoligorchis* is discussed: Neiland is of the opinion that it is a synonym of *Oligorchis* as the only real difference is that in the former the genital ducts pass between, instead of dorsally to, the excretory vessels. A key is given for the ten species of *Oligorchis*.

R.T.L.

(230h) A detailed description is given of the life-cycle of *Monoecocestus sigmodontis*, a widely distributed parasite of *Sigmodon hispidus*. The cysticeroids mature in about eight weeks in the body-cavity of five species of Oribatoidea, the largest number of cysticeroids being found in *Protoschelobates seghettii*. The prepatent period in the definitive host is approximately eight weeks but infection occurs only when the infected mites are cracked before being eaten. There is an apparent resistance to superinfection even when a single worm is present.

R.T.L.

(230i) One specimen of the tubiculous annelid, *Lanicides vayssierei*, dredged off Cape Boyds, Ross Island, Antarctica, contained *Cercaria hartmanae* n.sp. The cercariae develop in rediae which cause the body of the annelid to become abnormally swollen. *Lanicides* belongs to the family Terebellidae. The only other annelid known to be an intermediate host of a digenetic trematode is *Eupomatus* (*Hydroides*) *dianthus*, from which Linton obtained a cercaria named by Stunkard *Cercaria loossi*. *Eupomatus* belongs to the family Serpulidae. *C. hartmanae* and *C. loossi* are apharyngeate, have a forked tail, and an anterior organ in place of a muscular oral sucker. They are probably cercariae of blood flukes of marine fish.

R.T.L.

## 30—Journal of Parasitology (cont.)

- j. NEWTON, W. L., 1952.—“The comparative tissue reaction of two strains of *Australorbis glabratus* to infection with *Schistosoma mansoni*.” 38 (4, Sect. 1), 362–366.
- k. BOURNS, T. K. R., 1952.—“The discovery of trichina cysts in the diaphragm of a six week-old child.” 38 (4, Sect. 1), 367.
- l. YOUNG, R. T., 1952.—“Is *Hymenolepis californicus* (Young, 1950) a synonym of *Hymenolepis (Wardium) fryei* (Mayhew, 1925)?” 38 (4, Sect. 1), 367.
- m. MANN, P. H. & FRATTA, I., 1952.—“Transplantation of adult heartworms, *Dirofilaria immitis*, in dogs.” 38 (4, Sect. 1), 367–368.
- n. ROBINSON, H. W., 1952.—“A preliminary report on the life cycle of *Cloacitrema michiganensis* McIntosh, 1938 (Trematoda).” 38 (4, Sect. 1), 368.
- o. CALERO M., C., 1952.—“Incidence of *Trypanosoma lewisi*, *Sarcocystis muris*, species of *Spirochaeta* and microfilarial larvae in rats in Panama City and suburbs.” 38 (4, Sect. 1), 369.
- †p. TURNER, J. H., KATES, K. C., SINCLAIR, L. R. & FOSTER, A. O., 1952.—“Influence of *Haemonchus* on the course of *Nematodirus* infections in lambs on pasture.” 38 (4, Sect. 2), Suppl. pp. 13–14.

(230j) Whereas *Schistosoma mansoni* develops normally in the *Australorbis glabratus* of Puerto Rico, in the Brazilian specimens of this mollusc there is a marked cellular infiltration walling off the parasite, and the miracidia are destroyed and removed within 24 to 48 hours after penetration. R.T.L.

(230k) *Trichinella spiralis* cysts, many of which were calcified or contained dead larvae, were present in a prematurely born baby which died when six weeks old. The mother had no illness during pregnancy. Dr. L. E. Ranta has observed a heavy infection in a foetus in Toronto. R.T.L.

(230l) On account of the similarity of the hooks, *Hymenolepis californicus* was recently made a synonym of *H. (Wardium) fryei* by Schiller. As the inner longitudinal muscles are not grouped in definite bundles in *H. fryei* whereas in *H. californicus* they are arranged in four bundles, Young considers *H. californicus* a valid species. R.T.L.

(230m) Three weeks after transplantation living *Dirofilaria immitis* were recovered from the right heart of dogs. R.T.L.

(230n) *Cloacitrema michiganensis* develops in *Cerithidea californica*. There are two generations of rediae. The cercaria, which belongs to the megalurous group, encysts on the surface of snail shells or other objects. Two *Larus californicus* were experimentally infected by feeding them with metacercariae. In structure and life-history *Cloacitrema* closely resembles *Parorchis*. R.T.L.

(230o) No microfilariae were found in the blood of 347 *Rattus norvegicus* and 4 *R. rattus* killed in Panama City and its suburbs. R.T.L.

(230p) When a *Nematodirus* infection of lambs has nearly completed its presumably self-limiting course, the acquisition of a sizeable *Haemonchus* infection may lead to an exacerbation of the *Nematodirus* infection. This suggests a breakdown of resistance under the influence of haemonchiasis in untreated lambs. In lambs on a phenothiazine-salt mixture the *Nematodirus* egg counts rose during the first 5 or 6 weeks and were falling by the 10th or 11th week, but the *Haemonchus* egg counts rose steadily. By the 17th week the *Nematodirus* infection had faded out. Both infections were of lower grade than in the untreated animals. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 230—Journal of Parasitology (cont.)

- †q. FOSTER, A. O., TURNER, J. H., KATES, K. C. & SINCLAIR, L. R., 1952.—“Control of *Nematodirus* infections of lambs by free-choice administration of phenothiazine.” 38 (4, Sect. 2), Suppl. p. 14.
- †r. WYKOFF, D. E. & RITCHIE, L. S., 1952.—“Efficiency of the formalin-ether concentration technic.” 38 (4, Sect. 2), Suppl. pp. 15–16.
- †s. RITCHIE, L. S., PAN, C. & HUNTER, III, G. W., 1952.—“A comparison of the zinc sulfate and the MGL (formalin-ether) technics.” 38 (4, Sect. 2), Suppl. p. 16.
- †t. LARSH, Jr., J. E., 1952.—“Intracecal infection of mice with *Trichinella spiralis* and its bearing on the nature of the acquired resistance.” 38 (4, Sect. 2), Suppl. p. 16.
- †u. DEGIUSTI, D. L. & FIELD, W., 1952.—“A survey of *Trichinella spiralis* in rats, dogs, and cats of Detroit.” 38 (4, Sect. 2), Suppl. p. 16.
- †v. HUMES, A. G. & AKERS, R. P., 1952.—“Vascular changes in the cheek pouch of the golden hamster during infection with *Trichinella spiralis* larvae.” 38 (4, Sect. 2), Suppl. pp. 16–17.
- †w. WEHR, E. E., 1952.—“Recent studies on transmission of *Capillaria* spp. of poultry, with special reference to *C. contorta*.” 38 (4, Sect. 2), Suppl. p. 17.

(230q) Lambs given access to phenothiazine-salt mixture (1:9) were wholly protected from diarrhoea and death and acquired fewer parasites on pastures contaminated with *Nematodirus* and *Haemonchus*. Control lambs receiving salt only were in worse condition by all criteria. Untreated lambs showed exacerbation of *Nematodirus* infection accompanied by increasingly severe haemonchiasis. It is possible that the medication may have limited the influence of the *Haemonchus* on the course of the *Nematodirus* infection. R.T.L.

(230r) In each of five successive examinations of faeces, collected every other day from 1,036 persons, by the formalin-ether technique the number with helminth eggs increased, but by the fifth examination the percentage of new cases detected was low. The figures cited for *Ascaris*, hookworm and whipworm indicate that this is a highly efficient procedure. R.T.L.

(230s) By parallel examination of 161 single stool specimens it was shown that the formalin-ether (MGL) technique is slightly more efficient for the recovery of helminth eggs than the zinc sulphate technique. R.T.L.

(230t) There was no significant difference in the number of adult *Trichinella spiralis* recovered seven days after mice were given *Trichinella* larvae (i) by the mouth and (ii) by intracaeal injection. After a subsequent test infection by the mouth, both groups harboured about the same number of adults; this was significantly lower than the number obtained from the controls which received only the test infection. These results are held to be inconsistent with the hypothesis that acquired resistance to *T. spiralis* is local and suggest that this host has a general resistance to this parasite. R.T.L.

(230u) *Trichinella spiralis* was found at Detroit in 4.5% of 315 rats, in 4.47% of 180 dogs and in 5% of 20 cats. R.T.L.

(230v) In hamsters experimentally infected with *Trichinella spiralis*, sticky leucocytes and leucocyte pavements were observed *in vivo* in the venules and veins of the cheek pouches during the first few weeks, but by the fifth week the formed elements had begun to regain their normal flow. In the arterioles the blood flow remained unobstructed. In the striated muscle fibres the larvae became surrounded by a vascular network of sinusoid venous vessels. R.T.L.

(230w) In a study of the mode of transmission of *Capillaria contorta*, the red-banded earthworm (*Eisenia foetida*) proved a suitable experimental host for the transfer of its infective stage from bird to bird. Direct transmission by the ingestion of embryonated eggs was confirmed. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 230—Journal of Parasitology (cont.)

- †x. HANSEN, M. F., OLSON, L. J. & ACKERT, J. E., 1952.—“A comparison of the current technique with a new technique of experimentally feeding chickens embryonated ova of *Ascaridia galli*.” 38 (4, Sect. 2), Suppl. p. 17.
- †y. GAAFAR, S. M. & ACKERT, J. E., 1952.—“Studies on mineral-deficient diets as factors in resistance of fowls to parasitism.” 38 (4, Sect. 2), Suppl. pp. 17–18.
- †z. CHAN, K. F., 1952.—“Chemotherapeutic studies on *Syphacia obvelata* infection in mice.” 38 (4, Sect. 2), Suppl. p. 18.
- †ba. SCOTT, J. A., 1952.—“Studies on the mechanism of immunity to filarial worms in the cotton rat.” 38 (4, Sect. 2), Suppl. p. 18.
- †bb. DROPKIN, V. H., 1952.—“Studies on inheritance in *Meloidogyne*, the root-knot nematode.” 38 (4, Sect. 2), Suppl. p. 18.
- †bc. LARSH, Jr., J. E., HENDRICKS, J. R. & KIM, C. W., 1952.—“A study of the distribution and longevity of adult *Trichinella spiralis* in young and old mice.” 38 (4, Sect. 2), Suppl. pp. 18–19.
- †bd. BAUGHN, C., 1952.—“The effect of adrenalectomy on natural resistance of mice to infection with *Trichinella spiralis*.” 38 (4, Sect. 2), Suppl. p. 19.
- †be. BAUGHN, C., 1952.—“The effect of adrenalectomy on acquired resistance of mice to infection with *Trichinella spiralis*.” 38 (4, Sect. 2), Suppl. p. 19.

(230x) When a 1.25 Molar sugar solution is used as the medium for making a suspension of *Ascaridia galli* ova, there is a more even dispersal of the ova than in tap or distilled water and consequently less fluctuation in the numbers of worms recovered from experimentally infected fowls. The sugar solution has no detrimental effect on the embryonated ova. R.T.L.

(230y) While the resistance of growing chickens to *Ascaridia galli* infection is not affected by a phosphorus or calcium deficiency in their diet, the worms are shorter and fewer than in those birds with an adequate ration, for these minerals are important constituents of the *Ascaridia* body. R.T.L.

(230z) [A full account of this paper appears in *Amer. J. Hyg.* 1952, 56, 22–30. For abstract see *Helm. Abs.*, 21, No. 52b.]

(230ba) That the formation of a precipitate around the mouth of the infective larvae of *Litomosoides carinii* in serum from infected cotton-rats is the most concrete indication of an immunity was discussed in this paper [but not in the abstract]. R.T.L.

(230bb) Dropkin has devised techniques for the maintenance of pure lines of *Meloidogyne* for studies on inheritance and for the analysis of variation in morphological characters among the progeny of single larva isolations. R.T.L.

(230bc) During 3–13 days after experimental infection with *Trichinella spiralis* larvae, young and adult mice both harboured large numbers of worms in the small intestine: in both groups there was a significant reduction in the number of worms during the period of 15–17 days after infection, at 22–48 days there were very few, and at 54 days none were recovered. In the large intestine, in both groups, there were few worms in the period of 3–11 days after infection, a significant increase at 13–22 days and none at 54 days. R.T.L.

(230bd) When adrenalectomized, female white mice showed increased natural resistance to experimental infection with *Trichinella spiralis*. R.T.L.

(230be) Experiments on female white mice showed that adrenalectomy increased an acquired resistance to *Trichinella spiralis* without affecting the serological reaction. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 230—Journal of Parasitology (cont.)

- †bf. COX, H. W., 1952.—“The effect of concurrent infection with the dog hookworm, *Ancylostoma caninum*, on natural resistance of mice to infection with *Trichinella spiralis*.” 38 (4, Sect. 2), Suppl. pp. 19–20.
- †bg. COX, H. W., 1952.—“The effect of concurrent infection with the dog hookworm, *Ancylostoma caninum*, on the acquired resistance of mice to infection with *Trichinella spiralis*.” 38 (4, Sect. 2), Suppl. p. 20.
- †bh. BOYD, E. M. & HUSTON, E. J., 1952.—“A study of *Trichinella spiralis* infection in the mouse (*Mus musculus*) and in the hamster (*Cricetus auratus*).” 38 (4, Sect. 2), Suppl. p. 20.
- †bi. LARSH, Jr., J. E. & CAMPBELL, C. H., 1952.—“The effect on the natural resistance of mice to *Hymenolepis nana* var. *fraterna* of a simultaneous infection with *Trichinella spiralis*.” 38 (4, Sect. 2), Suppl. pp. 20–21.
- †bj. READ, C. P., AMREIN, Y. U. & WALTON, A. C., 1952.—“Oxyuroid nematodes from California reptiles.” 38 (4, Sect. 2), Suppl. p. 21.
- †bk. READ, C. P. & MILLEMAN, R. E., 1952.—“Helminth parasites of kangaroo rats.” 38 (4, Sect. 2), Suppl. p. 21.
- †bl. ELLS, H. A. & READ, C. P., 1952.—“The cultivation of *Turbatrix aceti* (Rhabditoidea: Nematoda) in the absence of microorganisms.” 38 (4, Sect. 2), Suppl. p. 21.

(230bf) Cox has carried out two experiments in which mice were infected orally or subcutaneously with *Ancylostoma caninum* followed by infection with *Trichinella spiralis*, 2 or 10 or 20 days later. When *T. spiralis* was given two days after administration of *A. caninum*, fewer adults were obtained from those receiving hookworm larvae orally; when *T. spiralis* was given ten days after the hookworm larvae, both groups showed fewer adults; when *T. spiralis* was given 20 days after, only those which had received hookworm larvae subcutaneously showed fewer adult *Trichinella* than the controls. It is suggested that local inflammation caused by the hookworm larvae, not cross immunity, is responsible. s.w.

(230bg) When mice immunized against *Trichinella spiralis* received an oral infection of *Ancylostoma caninum* larvae, fewer adult trichinae developed than when the hookworm infection was administered subcutaneously or in untreated immunized controls. There was no acquired resistance to the hookworm infection. R.T.L.

(230bh) In experimental infections of mice and hamsters with *Trichinella spiralis*, larval penetration of the intestine began within an hour and the number of worms in the intestine reached its maximum within two hours. By the 24th hour, 32% of the initial dose was lost by the mice and 47% by the hamsters. By the sixth day only 7%–17% of the females and 5%–11% of the males had survived. The males reached the large intestine ahead of the females and outnumbered them. R.T.L.

(230bi) Experiments are quoted which show that the natural resistance of mice to *Hymenolepis nana* var. *fraterna* is increased when they are infected simultaneously with 200–400 *Trichinella spiralis* larvae but not when the dose is increased to 800. R.T.L.

(230bj) As *Thelandros alatus*, the type species of the genus, lacks lateral alae, the genus *Pseudothelandros* n.g., with the type species *P. sceleratus* (Travassos) is proposed for those species with lateral alae in the male which have hitherto been placed in *Thelandros*. R.T.L.

(230bk) A new [unnamed] species of *Trypanoxyuris*, *Gongylonema neoplasticum* and *Catenotaenia* sp. have been found in kangaroo rats. The undescribed male of *Rictularia dipodomis* has been discovered and the validity of this species is confirmed. *Mastophorus* has priority over *Protospirura*. R.T.L.

(230bl) *Turbatrix aceti* rendered bacteria-free by a modification of Dougherty's technique were cultivated in a bacteria-free autoclaved Zimmerman's (1925) medium, but reproduction and growth followed only when the lecithin was replaced by an ether extract of rat liver. There was a marked lag before reproduction began. Growth was greatest when the initial pH was above 4.5 and was quite low at pH 3.75; it was more rapid when the medium was contaminated by unidentified microorganisms from “mother of vinegar”. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 239—Journal of Parasitology (cont.)

- †bm. FERGUSON, M. S., 1952.—“Copulation in the hookworm, *Ancylostoma caninum*, as recorded by the motion picture camera.” 38 (4, Sect. 2), Suppl. p. 21.
- †bn. SADUN, E. H., VAJRASTHIRA, S. & DEPAULO, V. J., 1952.—“Studies on intestinal parasitic infections in Choburi (central Thailand).” 38 (4, Sect. 2), Suppl. p. 22.
- †bo. SADUN, E. H. & VAJRASTHIRA, S., 1952.—“Intestinal helminthic infections in northeast Thailand.” 38 (4, Sect. 2), Suppl. p. 22.
- †bp. SADUN, E. H. & VAJRASTHIRA, S., 1952.—“*Diospyros mollis* (Maklua) and hexylresorcinol in the treatment of hookworm.” 38 (4, Sect. 2), Suppl. pp. 22–23.
- †bq. BABERO, B. B., 1952.—“The experimental infection of Alaskan gulls (*Larus glaucescens*) with *Diphyllbothrium* sp.” 38 (4, Sect. 2), Suppl. p. 23.
- †br. THOMAS, L. J., 1952.—“*Bothriocephalus abyssinus*, a cestode from the deep-sea fish *Echistoma tanneri* (Gill), with notes on its development.” 38 (4, Sect. 2), Suppl. p. 23.
- †bs. CHANDLER, A. C., ALDRICH, D. V. & DAUGHERTY, J., 1952.—“Some responses of *Hymenolepis diminuta* to castration of the host.” 38 (4, Sect. 2), Suppl. p. 23.
- †bt. WEINSTEIN, P. P., KRAWCZYK, H. J. & PEERS, J. H., 1952.—“Sparganosis in Korea.” 38 (4, Sect. 2), Suppl. pp. 23–24.

(23obn) A study of the stools, blood, urine and physical condition of 387 schoolchildren and 60 adult government officials in Choburi (Central Thailand) suggests a possible relationship between intestinal parasitism and haemoglobin, eosinophil percentage, height and weight, but not oral temperature, pulse and respiration rates, or blood pressure. In children the helminth infections were *Ascaris* 48%, hookworm 25%, and *Trichuris* 12%, and in adults, *Ascaris* 27%, hookworm 3% and *Trichuris* 3%.  
R.T.L.

(23obo) In north-east Thailand 64% of 504 schoolchildren between five and fourteen years old harboured helminths, viz., *Ascaris* 22%, hookworm 17%, *Trichuris* 12% and *Strongyloides* 7%. The overall incidence of opisthorchiasis was 29%, but in one community 66% were infected. Foci of this infection were on the Mekong River and around Chubson Lake (Sakonakorn Province). This is apparently the first record of opisthorchiasis in north-east Thailand.  
R.T.L.

(23obp) Sixteen children with hookworm infection were all negative after treatment before breakfast with berries of *Diospyros mollis* (Maklua). The dosage was one berry per year of age, up to a maximum of 20, ground up in a mortar and mixed with twice their volume of coconut milk. Of 23 children under the usual routine treatment with hexylresorcinol, seven were positive six days later.  
R.T.L.

(23obq) When trout (*Salmo gairdnerii*) containing plerocercoids of *Diphyllbothrium* sp. were fed to bears, dogs, foxes, human volunteers and young gulls (*Larus glaucescens*), the adult tapeworms recovered could not be morphologically distinguished. They all belonged to a single species.  
R.T.L.

(23obr) *Bothriocephalus abyssinus* was collected from *Echistoma tanneri* brought up from 700–800 fathoms in the Atlantic, about 20 miles south-east of Bermuda. The eggs developed normally at 78°F.–82°F. but on hatching the coracidia went to pieces at the sea-level barometric pressure.  
R.T.L.

(23obs) When *Hymenolepis diminuta* from castrated rats showed a marked increase in the natural fat, a decrease in transaminating ability with regard to the alanine – glutamic acid and aspartic acid – glutamic acid systems was also noticed.  
R.T.L.

(23obt) Spargana ranging from 23–30 cm. in length were surgically removed from the musculature of the abdominal or lower chest region of three Korean prisoners-of-war. Each gave a history of having eaten raw snake. A specimen of *Dinodon rufozonatum* caught near the prison camp was found to be heavily infected with spargana.  
R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

**230—Journal of Parasitology (cont.)**

- †bu. READ, C. P., 1952.—“Aerobic metabolism in cestodes: a correlation of structure and function.” 38 (4, Sect. 2), Suppl. p. 24.
- †bv. VAN CLEAVE, H. J., 1952.—“A preliminary analysis of the acanthocephalan genus *Corynosoma* in mammals of North America.” 38 (4, Sect. 2), Suppl. p. 24.
- †bw. ALLEN, R. W. & JACKSON, P. K., 1952.—“Seasonal variation in acquisition of *Thysanosoma actinioides* by sheep.” 38 (4, Sect. 2), Suppl. p. 25.
- †bx. HALEY, A. J. & BULLOCK, W. L., 1952.—“Comparative histochemical studies on the cement glands of certain Acanthocephala.” 38 (4, Sect. 2), Suppl. pp. 25–26.
- †by. REES, C. W., 1952.—“The processing of fecal specimens by the zinc sulfate flotation technique with safeguards for laboratory workers.” 38 (4, Sect. 2), Suppl. p. 26.
- †bz. HOFFMAN, G. L., 1952.—“A filamentous bacterium growing on two nematodes (Oxyuroidea: Theleostomidae) of the cockroach.” 38 (4, Sect. 2), Suppl. p. 27.
- †ca. TINER, J. D., 1952.—“Speciation in the genus *Ascaris*: additional experimental and morphological data.” 38 (4, Sect. 2), Suppl. p. 27.
- †cb. LE ZOTTE, Jr., L. A., 1952.—“Studies on marine digenetic trematodes of Puerto Rico. The family Bivesiculidae; its biology and affinities.” 38 (4, Sect. 2), Suppl. p. 28.

(230bu) Read has shown that in vitro, *Hymenolepis diminuta* which have been previously starved will store glycogen if glucose is available, and that they possess a cytochrome system. The oxygen tension in the central part of the strobila is zero and there is a gradient to the peripheral tissues where the diffusible end products of anaerobic metabolism are available for further oxidation; this may be correlated with the peripheral localization of muscles and the nervous system. S.W.

(230bv) This report condenses a section of a monograph of the Acanthocephala of North American mammals which Van Cleave is now completing. R.T.L.

(230bw) During three years, exposure on the New Mexico range of 27 tapeworm-free lambs for periods of about two months showed that the highest incidence and greatest intensity of infection with *Thysanosoma actinioides* occurred in the autumn. R.T.L.

(230bx) Haley & Bullock have performed a number of histochemical tests on the syncytial cement gland of *Neoechinorhynchus emydis* and the multiple glands of *Echinorhynchus gadi*. Both were found to contain a small amount of diffuse glycogen, a saliva-resistant polysaccharide, “ascorbic acid”, a small amount of fatty material and mitochondria-like structures, but neither contained phospholipid, or acid or alkaline glycerophosphatase. In both, the nuclear material contained desoxyribose nucleic acid. The cortical region of both glands stained with basic dyes and the vesicular region with acid dyes. S.W.

(230bz) A bacterium probably belonging to the Actinomycetaceae was observed extending from the cuticle of *Hammerschmidtella diesingi* and *Leidynema appendiculata* in *Periplaneta americana*. As no growth could be seen passing through the cuticle the nematode was apparently being used for anchorage only. R.T.L.

(230ca) The localization of ascarid larvae in experimentally fed mice differed with the host from which the worms were taken, viz., with *Ascaris columnaris* from the skunk the larvae appeared in the caecum, from the raccoon in the brain and from the badger in the skeletal muscles. *Citellus armatus* developed brain and muscle lesions when fed with about 5,000 eggs from the badger ascarid. The ascarids of the raccoon and badger, and *A. devosi* from the fisher and marten differ from *A. columnaris* by having shorter denticles. R.T.L.

(230cb) Bivesiculid cercariae which develop in rediae in molluscs of the genus *Cerithium* are basically furcocercous and are less closely related to the Monorchidae than to the Azygiidae. These simpler larvae are intermediate between the strigeids and azygiids, and provide a basis for placing the Bivesiculidae and the Azygiidae in the Strigeatoidea. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 230—Journal of Parasitology (cont.)

- †cc. CABLE, R. M., 1952.—“Studies on marine digenetic trematodes of Puerto Rico. Four species of magnacercous heterophyid cercariae with zygoercous aggregation in enc.” 38 (4, Sect. 2), Suppl. p. 28.
- †cd. CABLE, R. M., 1952.—“Studies on marine trematodes of Puerto Rico. An unusual type of cystophorous cercaria.” 38 (4, Sect. 2), Suppl. p. 28.
- †ce. HUNT, J. S. & SMITH, R. J., 1952.—“A new macrocercous cercaria of *Musculium* sp.” 38 (4, Sect. 2), Suppl. p. 29.
- †cf. HUNT, J. S., 1952.—“A new gorgoderid cercaria from *Pisidium* sp.” 38 (4, Sect. 2), Suppl. p. 29.
- †cg. KRUIDENIER, F. J., 1952.—“Mucoïd glands in the cercaria of *Zygocotyle lunata* (Paramphistomidae).” 38 (4, Sect. 2), Suppl. p. 29.
- †ch. KRULL, W. & MAPES, C., 1952.—“*Dicrocoelium dendriticum* and its intermediate host.” 38 (4, Sect. 2), Suppl. pp. 29–30.
- †ci. MAYHEW, R. L., 1952.—“Results of feeding small amounts of phenothiazine in pure infections of the large stomach worm *Haemonchus contortus* in the calf.” 38 (4, Sect. 2), Suppl. pp. 30–31.

(230cc) Two magnacercous heterophyid cercariae are described from *Cerithium algicola*, one from *C. variable* and one from *Turritella exoleata* but unlike other heterophyid larvae they possess enlarged tails devoid of fin folds. They are believed to be larvae of Galactosominae. One of these cercariae is zygoercous but this aggregation is not an indication of affinity. R.T.L.

(230cd) A large well developed cystophorous cercaria which occurs in *Pyrene mercatoria* is described. It is probably the larva of one of the large hemiurids allocated by Dollfus to distinct families related to the Hemiuridae. R.T.L.

(230ce) In the clam (*Musculium* sp.) collected near the outlet of West Lake, Michigan, a new [unnamed] macrocercous cercaria occurs which is distinguished from other gorgoderid cercariae by size, molluscan host and by the way it moves; the body is enclosed in an anterior chamber and the tail has an expanded portion just posterior to the body. R.T.L.

(230cf) Hunt has found in *Pisidium* sp. a new [unnamed] macrocercous cercaria with the body enclosed in a chamber of the tail. Behind this chamber the tail has a swollen region. R.T.L.

(230cg) In the extra-redial immature cercariae of *Zygocotyle lunatum* there are three categories of mucoïd glands which are highly metachromatic to thionin, viz., (i) those closely associated with the oral sucker, (ii) those within the tail and (iii) stellate dorsal glands. Further details are given of their number and position. These glands develop after the cercaria is well differentiated but are not present in normally emerged specimens. Their morphology, embryogeny and distribution are similar to those in monostomes and in the cercaria of *Fasciola hepatica*. R.T.L.

(230ch) This is a brief note of a demonstration in which some of the phenomena in the life-cycle of *Dicrocoelium dendriticum* were shown. Snails with extensive advanced infections could be identified with the naked eye. The slimeballs which constitute a stage in the life-cycle of this fluke are quite different from those produced by this fluke in different species of snails in Europe. R.T.L.

(230ci) The feeding of small daily doses of phenothiazine to calves infected with *Haemonchus contortus* would be of great assistance in reducing infection on heavily contaminated pastures. Calves experimentally infected with pure cultures were given 1.5 gm. mixed with the late afternoon grain ration. The ova on the second day after the first feed showed abnormalities and decreased rapidly, and in from five days to two weeks the faeces became negative and remained so for several weeks. R.T.L.

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## 230—Journal of Parasitology (cont.)

- †cj. CAUTHEN, G. E., 1952.—“The effect of feeding small amounts of phenothiazine daily to beef cattle.” 38 (4, Sect. 2), Suppl. p. 31.
- †ck. FOLSE, D. S. & BAILEY, W. S., 1952.—“The effect of phenothiazine on the egg production and larval development of the dog hookworm and large roundworm.” 38 (4, Sect. 2), Suppl. p. 31.
- †cl. SHORB, D. A., 1952.—“Antibiotics and their effect on parasitism in swine.” 38 (4, Sect. 2), Suppl. pp. 31–32.
- †cm. LEVINE, N. D. & IVENS, V., 1952.—“The toxic action of some detergents on the eggs and larvae of horse strongyles (Nematoda: Strongylidae).” 38 (4, Sect. 2), Suppl. p. 32.
- †cn. KERR, K. B. & GREEN, H. E., 1952.—“The cestodal activity of seven halogenated diphenyl methanes, a diphenyl propane, and a diphenyl ether.” 38 (4, Sect. 2), Suppl. p. 32.
- †co. DAUGHERTY, J. W., 1952.—“Studies on the protein metabolism of certain helminth parasites.” 38 (4, Sect. 2), Suppl. p. 32.

(230cj) For three consecutive years, 5 gm., 3 gm. and 2 gm. of phenothiazine were given daily to cows with calves during their lactation. Calves 3–4 months old were started on 0.2 gm. daily which was increased gradually to about 1 gm. at 6–7 months of age. In the first year of the experiment, the treated calves when slaughtered at weaning had 162 *Haemonchus*, 79 *Ostertagia*, 11,780 *Cooperia*, 47 *Bunostomum* and 6 *Oesophagostomum*, whereas the control calves had 223 *Haemonchus*, 592 *Ostertagia*, 14,027 *Cooperia*, 76 *Bunostomum* and 148 *Oesophagostomum*. The average eggs-per-gramme counts in each of the three years are also given. There was no significant difference in the weights gained by the treated calves and cows and the controls.

R.T.L.

(230ck) Phenothiazine in doses up to 1 gm. per day was well tolerated by dogs. Two doses of 30 gm. each did not produce toxic symptoms in a dog weighing 10 lb. Varying doses administered to six dogs naturally infected with hookworm caused a decrease in the number of eggs per gramme within 48 hours which persisted for 17 days after treatment ceased, but the counts did not reach the level preceding treatment. Although the effect on the ascarid ova counts was less marked, many of the eggs were abnormal.

R.T.L.

(230cl) Data are presented to show that no effect on pigs experimentally infected with *Oesophagostomum longicaudum* and *Hyostrongylus rubidus* resulted from the addition of 6 lb. of a crude mixture of vitamin B<sub>12</sub> and aureomycin to each ton of the stock diet.

R.T.L.

(230cm) Tergitol 7 prevented horse strongyle ova from embryonating at 0.5%, or embryonated eggs from hatching at 0.025%. In less than a day it killed all the first-stage larvae at 0.01%, all the second-stage larvae at 0.025%, and 94% of all third-stage larvae at 0.1%. Tergitol 4 prevented ova from embryonating at 0.6% and embryonated ova from hatching at 0.5%; it killed all first-stage larvae and 93% of second-stage larvae at 0.2%, and 95% of third-stage larvae at 0.6% in less than a day. Tergitol 08 prevented embryonation at 1.5%; it killed 94% of first-stage larvae at 0.8%, all second-stage larvae at 1.5%, and 94% of third-stage larvae at 4% in less than a day. Alkyl sodium sulphates are the surface-active ingredients of these three detergents.

R.T.L.

(230cn) Kerr & Green, having tested the anthelmintic activity of nine compounds of the diphenyl methane series against *Railletina cesticillus*, find that only 2,2'-dihydroxy-3,3',5,5',6,6'-hexachlorodiphenyl methane and 2,2'-dihydroxy-3,3',4,4',5,5',6,6'-octochlorodiphenyl ether removed 75%–100% of these cestodes. The others were less active.

R.T.L.

(230co) Preliminary studies suggest that in *Hymenolepis* and *Macracanthorhynchus* active glutamic acid–alpha ketoglutaric acid transaminase mechanisms are present with alanine, aspartic acid, valine and glycine as amino group donors. The same amino acids as were found in unhydrolyzed *Fasciola* extract (alanine, glycine, glutamic acid, aspartic acid, serine, proline, tyrosine, phenyl-alanine, valine, lysine, arginine and leucine-isoleucine) occurred in extracts of both worms although not in the same amounts.

R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 230—Journal of Parasitology (cont.)

- †cp. LUTTERMOSER, G. W., 1952.—“A method of detecting schistosomacidal activity based on response of *Schistosoma mansoni* infections in mice to fuadin therapy.” 38 (4, Sect. 2), Suppl. pp. 32–33.
- †cq. OLIVIER, L., VON BRAND, T. & MEHLMAN, B., 1952.—“The influence of oxygen lack on *Schistosoma mansoni* cercariae and on infected *Australorbis glabratus*.” 38 (4, Sect. 2), Suppl. p. 33.
- †cr. BROOKS, C. P., 1952.—“A comparative study of *Schistosoma mansoni* in *Tropicorbis hawanensis* and *Australorbis glabratus*.” 38 (4, Sect. 2), Suppl. p. 33.
- †cs. EVANS, A. S. & STIREWALT, M. A., 1952.—“Further studies on the demonstration of an enzymatic factor in cercariae of *Schistosoma mansoni* by the streptococcal decapsulation test.” 38 (4, Sect. 2), Suppl. p. 33.
- †ct. STIREWALT, M. A., 1952.—“Effect of age of the host on mouse infections with *Schistosoma mansoni* with especial reference to cercarial penetration.” 38 (4, Sect. 2), Suppl. p. 34.
- †cu. DURBIN, C. G., 1952.—“Emetine hydrochloride for the treatment of lungworms in sheep and goats.” 38 (4, Sect. 2), Suppl. p. 34.
- †cv. CAUTHEN, G. E., 1952.—“The feeding of small amounts of phenothiazine daily to weaned calves.” 38 (4, Sect. 2), Suppl. p. 34.

(230cp) When newly weaned mice were exposed to 500 *Schistosoma mansoni* cercariae there was a mortality of over 85% within eight weeks, but when fouadin was injected intraperitoneally twice daily after the 35th day most of the animals survived. The minimum curative dose was 125 mg. This dose might be used as a standard of reference in screening compounds. R.T.L.

(230cq) *Australorbis glabratus* infected with *Schistosoma mansoni* survived anaerobic conditions for 6 hours, but rarely for 16 hours. They shed few cercariae during anaerobiosis but on the return to aerobiosis numerous apparently normal cercariae were discharged. Cercarial shedding was reduced at 0.7% oxygen. Almost all cercariae kept for one hour or over under anaerobiosis failed to infect mice. R.T.L.

(230cr) Less than 10% of the miracidia of Puerto Rican *Schistosoma mansoni* which penetrate *Tropicorbis hawanensis* mature. The majority are encapsulated and are destroyed within 15 days, whereas 75%–100% reach maturity in *Australorbis glabratus*. R.T.L.

(230cs) Streptococcal decapsulation provides a sensitive test for the quantitative assay of a thermolabile enzymatic factor in *Schistosoma mansoni* cercariae. Freshly ground living cercariae are used and the volumetric reduction of the hyaluronic acid capsules of group C beta haemolytic streptococci is directly proportional to the number of cercariae employed. R.T.L.

(230ct) The susceptibility of albino mice to schistosome infection is markedly affected by their age. The worms resulting from exposure to 25–50 cercariae by partial body immersion of mice four to seven days old averaged 30.7%, whereas in those aged six weeks the average was 20.8%. With tail immersion many young mice were uninfected as the hair follicles are immature and few hairs have broken through the skin. R.T.L.

(230cu) Within one or two weeks after two intramuscular injections of 0.3 c.c. of a 1% aqueous solution of emetine hydrochloride per kg. body-weight, given at an interval of two days, the faeces of sheep infected with *Protostrongylus rufescens* and *Muellerius capillaris* became, and remained, free of larvae, but only 50% of the goats similarly treated benefited, the infection being markedly reduced but not eradicated. R.T.L.

(230cv) There was no significant difference in weight gain or in the number of nematode eggs per gramme of faeces between 40 weaned Brahman calves receiving 1 gm. phenothiazine daily for six months, and the same number of control calves. In yearlings, each receiving 1 gm. daily, the percentage development of nematode eggs was half that of the controls and one quarter when the dose was 1.5 gm. per day. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

## 230—Journal of Parasitology (cont.)

- †cw. JASKOSKI, B. J. & EGAN, T. P., 1952.—“Age resistance of swine ascarid eggs.” 38 (4, Sect. 2), Suppl. pp. 34–35.
- †cx. MOORE, D. V., THILLET, C. J., CARNEY, D. M. & MELENEY, H. E., 1952.—“Experimental infection of *Bulinus truncatus* with *Schistosoma haematobium*.” 38 (4, Sect. 2), Suppl. p. 35.
- †cy. DEWITT, W. B., 1952.—“Susceptibility of snail vectors to geographic strains of *Schistosoma japonicum*.” 38 (4, Sect. 2), Suppl. p. 35.
- †cz. KAGAN, I. G. & LEE, C. L., 1952.—“Duration of acquired immunity of *Schistosomium douthitti* infections in mice following treatment.” 38 (4, Sect. 2), Suppl. p. 35.
- †da. MCINTOSH, A. & FARR, M. M., 1952.—“*Renicola brantae* n.sp. from the kidney of the Canada goose, *Branta canadensis* (Linnaeus, 1758).” 38 (4, Sect. 2), Suppl. pp. 35–36.
- †db. SHORT, R. B., 1952.—“A new species of blood fluke from marine fish (Trematoda: Aporocotylidae).” 38 (4, Sect. 2), Suppl. p. 36.
- †dc. BYRD, E. E. & SCOFIELD, G. F., 1952.—“Developmental stages in the Digenea. II. The number of cercariae resulting from a single ochetosomatid trematode egg.” 38 (4, Sect. 2), Suppl. p. 36.

(230cw) The ovicidal action on *Ascaris lumbricoides* ova of a 5% solution of the detergent Duponol 80 increases as cleavage progresses and is more pronounced on cleavage stages of ova removed from storage at 4°C. to 6°C. When stored at room temperature the age of the ova and resistance to the detergent show an inverse relation. Decoated ova are less resistant than normal ova. R.T.L.

(230cx) In the laboratory it is difficult to infect *Bulinus truncatus* with *Schistosoma haematobium*. Data are given which show that *B. truncatus* is most susceptible to this infection during the first week of life. R.T.L.

(230cy) *Oncomelania hupensis* from China was readily infected with the Chinese and Japanese strains of *Schistosoma japonicum*, but resistant to the Formosan strain. *O. nosophora* from Japan was susceptible to the Japanese and Formosan strains but not to the Chinese strain. *O. formosana* from Formosa became infected with the Formosan strain but was resistant to the Chinese and Japanese strains. *Pomatiopsis lapidaria* was infected only with the Chinese strain. R.T.L.

(230cz) Experiments are cited which show that acquired immunity of mice to *Schistosomium douthitti* subsides about three weeks after the end of effective treatment with 2-hydroxy-4-methylol,4,5,dihydro 1,3,2,dithiastibiole or tri(n-dodecylmercapto)s-antimonious acid. R.T.L.

(230da) *Renicola brantae* n.sp. was collected from cyst-like outgrowths of the kidney tubules of *Branta canadensis* at the Pea Island National Wildlife Refuge, N.C. It differs from other *Renicola* species, except possibly from *R. mediovitellata*, in the number and arrangement of the vitelline follicles: in the latter species both the testes and ovary are lobed whereas in *R. brantae* the testes are entire and oval and the ovary is trilobed. R.T.L.

(230db) In 13 out of 16 white trout (*Cynoscion arenarius*) from the Florida Gulf coast, up to 34 examples of an apparently new [unnamed] blood fluke, averaging about 1.2 mm. in length, were found in the heart. Specimens were also obtained from *C. nebulosus*. R.T.L.

(230dc) Exposure of 14 physid snails to a single ochetosomatid egg gave the following average results: 17.82 cercariae per day for 30.21 days, and on dissection 50.93 daughter sporocysts per snail. The sporocysts produced 10.57 cercariae during the experimental period at a daily rate of about 0.35 cercariae. Snails exposed to 2, 3, 4 and 5 eggs respectively produced a slightly higher average number of cercariae but this never exceeded 0.56 cercariae per sporocyst per day. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

30—Journal of Parasitology (cont.)

- †dd. CABLE, R. M., 1952.—“Studies on marine digenetic trematodes of Puerto Rico. The systematic position of the subfamily Gymnophallinae Odhner.” 38 (4, Sect. 2), Suppl. pp. 36–37.
- †de. CABLE, R. M., 1952.—“Studies on marine digenetic trematodes of Puerto Rico. Observations on life histories in the families Haplospilichnidae and Megaperidae.” 38 (4, Sect. 2), Suppl. p. 37.
- †df. LEIGH, W. H., 1952.—“A dermatitis-producing schistosome cercaria from marine snails at Miami, Florida.” 38 (4, Sect. 2), Suppl. p. 38.
- †dg. NAJARIAN, H. H., 1952.—“The metacercaria of *Echinoparyphium flexum* (Linton) Dietz 1909 in frog kidneys.” 38 (4, Sect. 2), Suppl. p. 38.
- †dh. NAJARIAN, H. H., 1952.—“The encystment of *Cercaria goodmani* Najarian 1952.” 38 (4, Sect. 2), Suppl. pp. 38–39.
- †di. NAJARIAN, H. H., 1952.—“Observations on caddis fly larvae with respect to their serving as intermediate hosts for trematodes.” 38 (4, Sect. 2), Suppl. p. 39.
- †dj. ABDEL-MALEK, E. T., 1952.—“Life history of *Petasiger chandleri* n.sp. (Trematoda: Echinostomatidae) from the pied-billed grebe, *Podilymbus podiceps podiceps*.” 38 (4, Sect. 2), Suppl. p. 39.

(23odd) Cable's observations indicate that the Gymnophallinae cannot belong to the Microphallidae but have a close affinity to the Fellodistomatidae, the chief difference being the absence of a cirrus sac. This subfamily should either be placed in the Fellodistomatidae or raised to family rank and both combined in one superfamily. They show relationship with Strigeatoidea and may represent a divergence from that order towards the Prosostomata. R.T.L.

(23ode) Cable describes typical life-histories and is of the opinion that the Megaperidae are related to the allocreadioid complex whereas the Haplospilichnidae are more like the amphistomes and echinostomes. R.T.L.

(23odf) The “sea bather's eruption” which occurs sporadically on the east coast of Florida may be due to a new species of cercaria [unnamed] of schistosome type discharged by *Haminoea antillarum guadalupensis* which inhabits grassy areas in the shallow water off Virginia Key in Biscayne Bay, Florida. This is the fourth schistosome cercaria from marine waters known to produce dermatitis. R.T.L.

(23odg) An echinostome metacercaria from the kidneys of *Hyla crucifer*, *Pseudacris nigrita triseriata*, *Rana pipiens*, *R. clamitans* and *R. sylvatica*, when fed to chicks, gave rise in seven days to immature adults of *Echinoparyphium flexum*. It is unlikely that in nature the encysted stage in frog kidneys is a normal phase of the life-cycle, as McCoy in 1928 had shown that these metacercariae, encysted in *Helisoma trivolvis* and *Physa integra*, could infect chicks. R.T.L.

(23odh) Caddis fly larvae belonging to *Limnephilus* harbour metacercariae of *Cercaria goodmani* which encyst within the fatty tissue of the abdomen. The molluscan intermediary is *Limnaea palustris*. Three instances of precocious development to metacercariae within the daughter sporocysts were observed in naturally infected *Limnaea*. R.T.L.

(23odi) As caddis fly larvae of the genus *Limnephilus* build a log-cabin type of case, their activities afford excellent opportunities for observing their infection with *Cercaria goodmani*. R.T.L.

(23odj) *Cercaria chandleri*, recently described from *Helisoma corpulentum* in Lake Itasca, Minnesota, when fed to young ducks, chicks, canaries, mice and a garter snake, failed to develop except in the canaries. Immature adults recovered from two of the canaries are recognized as belonging to the genus *Petasiger*. Adults of the same species were collected from pied-billed grebes (*Podilymbus podiceps podiceps*) in the Itasca Lake region. *Petasiger chandleri* n.sp. differs from *P. nitidus* and the other described species by its long oesophagus and short cruri, the number of uterus loops and of eggs, and the preacetabular length being greater than the postacetabular length. R.T.L.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8–10, 1952.

**230—Journal of Parasitology (cont.)**

- †dk. KARTMAN, L., 1952.—“On the frequency of mosquitoes with different intensities of dirofilarial infection.” **38** (4, Sect. 2), Suppl. pp. 39-40.

(230dk) A relationship was shown to exist between the percentage infection rate and the intensity of infection in the individual mosquitoes of each species when infections with *Dirofilaria immitis* were produced in *Anopheles quadrimaculatus*, *A. freeborni*, *Aedes aegypti*, *A. albopictus*, *Culex quinquefasciatus*, *C. pipiens* and reciprocal  $F_2$  hybrids of these two *Culex* species. In poor hosts with less than 50% infection rates few individuals will contain more than five or six developing *Dirofilaria* larvae whereas many of those with infection rates approaching 100% (*Anopheles quadrimaculatus*, *A. freeborni* and *Aedes albopictus*) harbour from 10 to 30 or more filarial larvae.

R.T.L.

**231—Journal of Pathology and Bacteriology.**

- a. VAUGHN, J., 1952.—“The stimulation of the eosinophil leucocyte.” **64** (1), 91-102.

(231a) A single injection of extract of *Ascaris lumbricoides* var. *suum* prepared by Macheboeuf & Mandoul's method produced eosinophilia in normal, unsensitized guinea-pigs. The active factor is a mixture of polypeptides and other protein breakdown products among which is the eosinophilogenic substance or its precursor. Histamine phosphate has a similar eosinophilogenic activity. The administration of an antihistamine drug completely prevented the effects of the extracts.

R.T.L.

**232—Journal of Pediatrics.**

- a. GODDARD, R. F. & BROWN, H. W., 1952.—“The treatment of pinworm infection (*Enterobius vermicularis*) with egressin.” **40** (4), 469-473.

(232a) Egressin administered thrice daily for two days in 1 gm. doses to 28 children and 2 gm. doses to 15 adults with *Enterobius vermicularis* resulted in the cure of 11 of the children and of 7 of the adults as determined by NIH swab examination 7-28 days after treatment. Repeated two-day courses at weekly intervals are suggested. Alcohol, smoking and fatty foods are contra-indicated before, during and for one day after treatment.

R.T.L.

**233—Journal de Radiologie et d'Électrologie.**

- a. DUMAZER, R. & HOUEL, J., 1952.—“Les aspects anatomiques et radiologiques du kyste hydatique compliqué du poumon.” **33** (1/2), 69-75.
- b. COSTANTINI, CURTILLET & LAQUIÈRE, 1952.—“Radiodiagnostic de l'échinococcose osseuse des os longs.” **33** (1/2), 75-77.
- c. PIÉTRI & DURAND, 1952.—“Aspects radiologiques de la vésiculation exogène calcifiée du foie.” **33** (1/2), 77-79.
- d. DURAND & PIÉTRI, 1952.—“Image de pneumokyste du foie avec visibilité de vésicules filles.” **33** (1/2), 80.
- e. LE GÉNISSEL & HOUEL, 1952.—“A propos de quelques causes d'erreur dans le diagnostic radiologique du kyste hydatique du poumon.” **33** (1/2), 80-88.
- f. LOUBEYRE, J., FARKAS & GRANGAUD, P., 1952.—“Sur un cas d'échinococcose pulmonaire métastatique.” **33** (1/2), 88-89.
- g. BOURREL, M., 1952.—“Présentation de clichés.” **33** (1/2), 89.
- h. TILLIER, H., 1952.—“A propos d'une erreur de diagnostic entre kyste hydatique et cancer du poumon.” **33** (1/2), 89-90.
- i. VIALLET, P., FERRAND, J., CHEVROT, C. & VIALLET, M., 1952.—“Un cas d'hydatidose humérale étendue chez une jeune indigène algérienne.” **33** (1/2), 94.

† Abstract of paper presented at the 27th Annual Meeting of the American Society of Parasitologists, Ithaca, N.Y., September 8-10, 1952.

**234—Journal of the Royal Army Veterinary Corps.**

- a. BISHOP, H. W., 1952.—“Meat inspection in Germany.” 23 (1), 21–22.
- b. HARRIS, D. G., 1952.—“*Eurytrema pancreaticum*.” 23 (1), 23–24.

(234a) Bishop continues his observations on meat inspection as practised in Germany and deals with *Cysticercus bovis* infection, sarcocystis, licked beef, and strongylosis in equines. The incidence of *C. bovis* is increasing and it is widely held that an important and frequently infected predilection site is as yet not determined. Infections are most common in prime beef (two to three-year-old animals). Viable cysts are more common in animals killed in the autumn than in those killed in the spring. Calves are examined because of the rise in the incidence of cysticerciasis but this is not required by law until they are six months old. The law prescribes that carcasses showing many cysts (five or more in four incisions) be condemned but that those with less than five cysts visible be cooled and then frozen until the temperature in the depth of the musculature is  $-4^{\circ}\text{C}$ . Statistical data reveal an incidence of 1.5% in adult cattle in the past year. The migrating larvae of strongyles seldom affect the musculature but the stomach and the intestines of horses are always treated as unfit for human consumption. P.L.ler.

(234b) In Mauritius routine meat inspection has revealed the presence of *Eurytrema pancreaticum* in the pancreas of many locally bred cattle, sheep and goats. The organs were enlarged and engorged with light induration of the ducts distended with parasites. The morphological characteristics of the parasites are recorded. [*Inter alia* it is observed that the spineless cuticle “is streaked with blood-red coloration” and that “the cylindrical anus” is situated “near the anterior border of the ventral sucker”.] The intermediate host is unknown. This parasite was present “in 50 per cent of the animals in good health and in 90 per cent of the animals in a cachectic state”. P.L.ler.

**235—Journal of Tropical Medicine and Hygiene.**

- a. MANSON-BAHR, P., 1952.—“The action of hetrazan in Pacific filariasis.” 55 (8), 169–173.
- b. WATSON, J. M., FAWZI, M. & DAMLUJI, S., 1952.—“Clinical investigations on the treatment of urinary bilharziasis. Part IV. Further observations on the use of miracil D.” 55 (8), 176–181.

(235a) The non-periodic microfilariae in filariasis cases in Fiji disappear rapidly from the capillary blood after the administration of hetrazan but the clearance does not involve the venous circulation. To effect this treatment must be continuous for at least two months. Two experiments are cited which show that hetrazan, given in therapeutic doses for three days, causes a reduction in the microfilarial level beyond that at which infection of *Aedes scutellaris pseudoscutellaris* can take place and may therefore be considered a simple and practicable prophylactic measure. R.T.L.

(235b) Watson *et al.* report clinical trials on 24 cases of *Schistosoma haematobium* infection with plain tablets of Nilodin (miracil D). Each patient received a total of from 80 to 120 mg. per kg. body-weight over a period of 5 days, in doses given twice daily. It is stated that the rate of cure was 67%, that routine urine sedimentation supplemented by the hatching test are adequate criteria of cure, and that subclinical infections after treatment are of little epidemiological importance and may even be of value to the patient owing to the resulting immunity. It is claimed that miracil D is as effective as tartar emetic, more effective than foudin and less toxic than either, and that there is no special merit in enteric-coated tablets. R.T.L.

**236—Journal of the Washington Academy of Sciences.**

- a. DURBIN, C. G., 1952.—“A new roundworm, *Capillaria pirangae* (Nematoda: Trichinellidae), from the scarlet tanager, *Piranga erythromelas*.” 42 (7), 238–239.
- b. COURTNEY, W. D., 1952.—“The teasel nematode, *Ditylenchus dipsaci* (Kühn, 1857), Filipjev, 1936.” 42 (9), 303–309.

(236a) *Capillaria pirangae* n.sp. from *Piranga erythromelas* caught at Beltsville, U.S.A., closely resembles *C. quiscalis*, differing in the shape of the vulvar appendage the base of which

is narrow. The ova have longitudinal folds. The male resembles that of *C. collaris* but there is no spine at the tip of the spicule. R.T.L.

(236b) Although the stem eelworm, *Ditylenchus dipsaci*, was first reported by Kühn nearly a century ago from the infested flower heads of the teasel or fullers thistle there has not previously been published any account of the main symptoms of disease which infestation by the eelworm brings about in the growing plant. This has now been supplied in the short paper by Courtney. *Dipsacus fullonum* L. is a biennial and during the seedling and growing stages infested plants show progressive destruction of the crown with thickening and distortion of the leaf petioles, leading very often to the death of plants before the production of the flowering stem in the second season. The paper is illustrated by good photographs which show these phases of attack and the malformed "puff ball" heads which may be produced on infested plants in the second year of growth. Courtney's studies were carried out in the Pacific North West and, in fields where teasels were infested, an examination of the weeds showed that *Collomia grandiflora* Dougl. (large flowered collomia) could serve as a reservoir host and that the eelworm could infest and reproduce in spring and winter oats, rye, and spring and winter wheat but not in corn (maize), crimson clover, Hubam clover and field peas. The author found that control could be effected by soaking teasel seed for 1 hr. at 122°C. or 2 hr. at 120°C. in water with or without a wetting agent and by suitable crop rotations in which susceptible cereals are omitted and weeds are kept in check. T.G.

### 237—Klinische Wochenschrift.

- a. PRÉVÔT, R., HORNBOSTEL, H. & DÖRKEN, H., 1952.—"Lokalisationsstudien bei *Taenia saginata*." 30 (3/4), 78-80.

(237a) Prévôt and his collaborators have used X-ray examinations in an attempt to determine the exact position of *Taenia saginata* in the human intestinal canal. The main object was to locate the anterior segments so that anthelmintics could be administered as near as possible to the scolex. In 50 out of 53 X-rays the first recognizable segments were found in the jejunum about 40-50 cm. behind the duodeno-jejunal flexure; in the remaining three cases the worms were lower down but were still in the jejunum. The authors also discuss and criticize Bonsdorff's method of locating *Diphyllobothrium latum* by means of egg aspiration with a duodenal sound. A.E.F.

### 238—Leaflet. Ministry of Agriculture, Northern Ireland.

- a. ANON., 1952.—" 'Hoose' or 'husk' in farm stock." No. 80, 4 pp.

### 239—Leaflet. United States Department of Agriculture.

- a. SCHWARTZ, B., 1952.—"Controlling lungworms of swine." No. 118, 5 pp. [Revised.]

### 240—M.S.C. Veterinarian. Michigan State College.

- a. TURK, R. D., 1952.—"Swine ascariasis." 12 (3), 128-130.

### 241—Médecine Tropicale. Marseilles.

- a. MOIGNOUX, J. B., 1952.—"La gélose formolée et son emploi en helminthologie." 12 (1), 81-82.

(241a) Moignoux recommends the use of formalized gelose (gelose 1.3%, formalin 2.5%) for facilitating the mounting of cestode and trematode whole mounts and sections. The stained specimen may be orientated on the slide in water, the excess water removed and warm gelose solution added and allowed to set. The slide is then put into 70% alcohol, dehydrated in the normal way and mounted in Canada balsam. Amongst other advantages claimed is the avoidance of undue hardening and shrinkage of the specimens. S.W.

**242—Mededeelingen. Directeur van de Tuinbouw. 's-Gravenhage.**

- a. ANDEWEG, J. M., TJALLINGII, F., KROFT, W. G. VAN DER, RIEMENS, J. M. & BRAVENBOER, L., 1952.—“Proeven met tomaten-onderstammen resistent tegen het wortelknobbelaaltje.” 15 (5), 255-264.

(242a) In this collection of three short articles Andeweg points out that *Lycopersicon peruvianum* has been shown to be resistant to the root-knot eelworm *Meloidogyne incognita* and that when *L. peruvianum* is crossed with *L. esculentum* resistance is dominant. Several resistant crosses made in Hawaii were tested in Holland and some yielded fair crops. Tjallingii & van der Kroft have evolved a method of grafting *L. esculentum* on to resistant root-stocks which gave plants with improved growth and yield. Riemens & Bravenboer tested the yields from grafted and non-grafted plants growing in infested soil. Potentate was the scion on four resistant root-stocks. Ungrafted Potentate began to yield fruit 10 days before grafted plants but the plants died down earlier. All the grafted plants gave higher yields and greater numbers of fruit per plant than the non-grafted. No root-knots were seen on the grafted stocks. It is emphasized that very careful selection of *L. peruvianum* crosses must be made and that it is not known whether they are resistant to any species or variety of *Meloidogyne* other than *M. incognita*.  
M.T.F.

**243—Medicina. Revista Mexicana.**

- a. RUIZ REYES, F., 1952.—“Datos históricos sobre el origen de la oncocercosis en América.” 32 (645), 49-56.  
b. NETTEL F., R., 1952.—“Estudio comparativo de las capturas de simúlidos en personas y animales (equinos), en el foco de oncocercosis de Chiapas.” 32 (646), 73-80. [English summary pp. 78-79.]  
c. VARGAS, L., 1952.—“Consideraciones sobre una campaña contra la oncocerciasis.” 32 (650), 189-191.  
d. MAZZOTTI, L., 1952.—“Oncocercosis equina en México.” 32 (653), 243-244.  
e. MAZZOTTI, L., 1952.—“Descubrimiento de microfilarias de *Onchocerca cervicalis* en tejidos oculares del caballo.” 32 (655), 291-292. [English summary p. 292.]

(243a) In an endeavour to trace the history of the spread of onchocerciasis in America, Ruiz Reyes has examined the following alternative theories: (i) that Oaxaca, Mexico, is the oldest focus and that the disease was brought there by slaves from West Africa, becoming established in the late nineteenth century (80 years after its probable introduction); (ii) that onchocerciasis first entered America in Guatemala and then spread to Chiapas and Oaxaca; (iii) that the Oaxaca focus is independent of those in Guatemala and Chiapas. Historical evidence suggests that the first theory is the most probable. The small centre discovered in 1947 in Venezuela is considered to be of African origin and to be independent of the three foci referred to above.  
P.M.B.

(243b) A comparative study of the biting habits of 21 species of *Simulium*, collected from human beings and from horses and mules in the Chiapas centre of onchocerciasis, showed that *S. ochraceum* bites only human beings, whereas *S. metallicum*, *S. callidum*, *S. exiguum* and *S. haematopotum* bite both humans and animals. The remaining species were only found biting animals, although it is thought that some may become adapted to biting humans and thus constitute additional potential vectors of onchocerciasis. The study was based on collections made in 40 localities over the years 1945-1948, during which period a total of 5,472 female *Simulium* were caught on human beings and 2,967 on horses and mules.  
P.M.B.

(243e) Microfilariae of *Onchocerca cervicalis* were demonstrated moving actively in the reticular tissue of four out of nine eyes taken from the carcasses of nine horses in whose cervical ligaments adult *O. cervicalis* had been found. From one to sixteen embryos were present in each eye. This is thought to be the first record of microfilariae of *O. cervicalis* in the eye. In a footnote, reference is made to an unpublished observation of the disappearance of microfilariae of the same species from the skin of a horse which was treated with hetrazan at the rate of 1 mg. per kg. body-weight.  
P.M.B.

**244—Medizinische Klinik.**

- a. GREINER, H., 1952.—“Ueber eine medizinale Vergiftung mit Extractum filicis maris aethereum.” 47 (19), 645–647.

**245—Medycyna Weterynaryjna.**

- a. ZALESKI, J., 1952.—“Patogeneza i profilaktyka chorób inwazyjnych młodych zwierząt.” 8 (6), 270–272.  
 b. ZALESKI, J., 1952.—“Leczenie chorób inwazyjnych młodych zwierząt.” 8 (7), 317–321.  
 c. PUSTÓWKA, T., 1952.—“Kombinowane zakażenie świni wagrami, bąblowcami oraz morylicą.” 8 (8), 357.  
 d. ZALESKI, J., 1952.—“Leczenie chorób inwazyjnych młodych zwierząt.” 8 (8), 364–366.  
 e. ZADURA, J. & NIEĆ, L., 1952.—“Robaczycza żołądka u krowy wywołana przez przywry *Paramphistomum cervi*.” 8 (8), 370–371.

(245a) This is a general paper on the pathogenicity and prevention of parasitic diseases in young animals and is based mainly on the Russian literature. C.R.

(245b) Zaleski lists the various helminthiasis of young horses and calves together with their treatment based on data from various sources. C.R.

(245c) Pustówka reports the case of a pig which was heavily infected with *Cysticercus cellulosae* and also with hydatid and *Fasciola hepatica*. C.R.

(245d) Zaleski, in this review of the treatment of helminthiasis in lambs, kids and young pigs, lists the drugs and dosages used against different parasites in these animals. C.R.

(245e) Zadura & Nieć report the death of a cow in which the rumen was very heavily infected with *Paramphistomum cervi*. C.R.

**246—Memoirs of the Faculty of Agriculture, Kagoshima University.**

- a. SHIBUYA, M., 1952.—“Studies on the varietal resistance of sweet potato to the root-knot nematode injury.” 1 (1), 1–22.

(246a) Shibuya tested 19 varieties of sweet-potato in field plots infested with root-knot nematodes in Kagoshima and found considerable variation in gall formation. In tests with root-knot nematodes from other hosts there was no evidence of host specialization. Experiments showed that larvae entered the root tips of both resistant and susceptible varieties of sweet-potato. On measuring the index of development of nematodes in 20 varieties 7, 14 and 21 days after inoculation, differences significant at the 1% level were found which agreed with the known resistance. Shibuya considers that in roots of resistant plants there is a failure of the giant cells to develop leading to starvation of the nematodes. Tests indicated that a substance is produced in the meristematic region of the roots which attracts the nematodes: dead root tips also appear to be attractive. A table is given of the resistance shown by certain sweet-potato varieties and their hybrids from which it is deduced that resistance is heritable and dominant. A comparison of resistance to potassium chlorate injury and to root-knot nematode injury shows no correlation between them. M.T.F.

**247—Monatshefte für Praktische Tierheilkunde.**

- a. ENIGK, K., 1952.—“Pathogenität und Therapie des Strongyloidesbefalles der Haustiere.” 4 (3), 97–112.

(247a) Enigk reports on a series of experimental infections of young pigs, nutria, rabbits, guinea-pigs, rats, hamsters and mice designed to determine the pathogenicity of *Strongyloides* infections. His results show that larval skin penetration causes itching which may become very severe and lead to the formation of weals. It is possible for the larvae to introduce bacteria. Migrating larvae give rise to small haemorrhages in lungs and kidneys which are of purely mechanical origin. Mature worms parasitize the mucosa primarily of the small intestine, but also to a smaller extent of the other parts of the gastro-intestinal canal and very occasionally

of the gall-bladder, bile ducts, bronchi and ureters. The number of worms necessary to produce symptoms varies greatly according to species and age of the host. Enigk also reviews the literature on anthelmintic treatment of this infection and briefly reports on his own experiments with 18 substances. Partial success was obtained with phenothiazine, nemural, tetrachlorethylene, hexylresorcinol and Egressin but the most promising substance tested was the crystal violet preparation, Badil. The paper concludes with 90 references. A.E.F.

#### 248—Nature. London.

- a. RAGHAVAN, N. G. S., MISRA, B. G. & ROY, R., 1952.—“ Filarial infections in mosquitoes.” [Correspondence.] **170** (4319), 253.

(248a) Fifty-five out of 3,307 *Culex fatigans* and 41 out of 1,928 *Mansonioides annulifera*, collected locally in Orissa State, were found to have infective filarial larvae in the head and proboscis. Some *M. annulifera* also had developing forms in the malpighian tubules. Precipitin tests of the blood meals of the mosquitoes showed that *C. fatigans* had a greater predilection for human blood than *M. annulifera* which feed mainly on domesticated animals and birds. Of 40 dogs examined, four had microfilariae similar to those of *Dirofilaria repens*. In experiments, a high percentage of *M. annulifera* became infected with *D. repens* and were refractory to *Wuchereria bancrofti*, while *C. fatigans* was highly susceptible to *W. bancrofti* and refractory to *D. repens*. R.T.L.

#### 249—Nature. Paris.

- a. CLAUDE, D., 1952.—“ Un nouvel ennemi des nématodes.” No. 3208, p. 233.

(249a) This is a short note drawing attention to an article published by Weber *et al.* in *Nature, Lond.*, 1952, **169**, 834–835 [for abstract see Helm. Abs., **21**, No. 120c] in which the successful attack of nematode larvae by an amoeboid organism is described. R.T.L.

#### 250—New England Journal of Medicine.

- a. ROSS, G. L., NORCROSS, J. W. & HORRAX, G., 1952.—“ Spinal-cord involvement by schistosomiasis mansoni.” **246** (21), 823–826.

#### 251—North American Veterinarian.

- a. INNES, J. R. M., 1952.—“ Cerebrospinal nematodiasis, a nervous disease caused by immature nematodes (*Setaria digitata*).” **33** (7), 476–478.  
b. MANN, P. H., 1952.—“ Note on the incidence of intestinal helminths and coccidia in cats in New York City.” **33** (7), 484.  
c. HITCHCOCK, D. J., 1952.—“ The efficacy of vermiplex as an ascaricide in kittens.” **33** (7), 485–486.  
d. MANN, P. H., 1952.—“ A note on the incidence of heartworm, *Dirofilaria immitis*, in cats in New York City.” **33** (9), 630.  
e. COOPERRIDER, D. E., 1952.—“ Observations on the diagnosis of parasites of small animals —II.” **33** (10), 709–713.

(251a) Innes reviews our knowledge of epizootic neuroparalysis caused by the wanderings of immature *Setaria digitata* in the nervous systems of those domesticated animals which are not the natural hosts of this parasite. The essential pathology is a focal encephalomyelomalacia and is due to the traumatic effect of the movements of the worms. A full account of this disease in Japanese was published by a special Korean Research Commission (1939–1943) but is not available in English. The disease is now named cerebrospinal nematodiasis as the same pathology may result from infection with different species. R.T.L.

(251c) All the ascarids were removed from 37 out of 51 kittens, weighing 442 gm. to 1,280 gm., by a single capsule, size 0, of vermiplex (di-phenthane-70, 3.85 gm. and methylbenzene, 4.63 gm.). Each animal was fasted for 18 hours. The capsules were softened in warm water before administration. Milk and solid food were given four hours afterwards.

In 19 other kittens toxic symptoms occurred and death followed in 15 of the total of 70 animals treated. It is advised that small kittens should not be treated with vermiplex as size 0 is the smallest capsule supplied. R.T.L.

(251d) Mann failed to find any evidence of *Dirofilaria immitis* in 130 cats from New York City examined by blood smear technique and by autopsy. P.M.B.

## 252—Ohio Journal of Science.

- a. WORLEY, D. E. & BANGHAM, R. V., 1952.—“Some parasites of fishes of the Upper Gatineau River Valley.” 52 (4), 210–212.

(252a) Helminths representing approximately 14 species were found in 60 out of 89 fish from the upper Gatineau River and its tributaries in south-western Quebec. This is a somewhat lower incidence than that obtained by other investigators in the same general area. The species are tabulated under their hosts. The influence of habitat on the distribution of parasites is evident from the fact that whereas pike from the Gatineau River proper harboured only *Leptorhynchoides thecatus*, those from the Baskatong River and a small lake and stream draining into it were lightly infected with *Proteocephalus stizostethi*, *P. pinguis* and *Contracaecum brachyurum*. P.M.B.

## 253—Orchardist of New Zealand.

- a. JACKS, H., 1952.—“A field injector for soil fumigation.” 25 (3), 9, 11, 13.

(253a) Jacks describes an apparatus for attachment to a single or double-bladed plough for injecting soil fumigants into the furrow immediately ahead of the advancing share. It comprises (i) a cradle to hold an inverted can of fumigant with screw cap, shut-off valve, breather tube and level indicator; (ii) a piston pump with adjustable stroke operated by a spiked wheel (trailing over the soil on the unploughed side) via a 3-lift cam; (iii) spring-protected tubes ending in nozzles giving a fan-shaped spray. B.G.P.

## 254—Oyo-Dobutsugaku-Zasshi (Magazine of Applied Zoology). Tokyo.

- a. ICHINOHE, M., 1952.—“On the soy bean nematode, *Heterodera glycines* n.sp., from Japan.” 17 (1/2), Reprint 4 pp.

(254a) Ichinohe describes *Heterodera glycines* n.sp. from Japan and Manchuria. It is a species with lemon-shaped cysts 0.69 mm. by 0.49 mm. and has been found parasitizing only *Glycine max*, *Phaseolus angularis* and *P. vulgaris*. The larvae are  $484 \pm 21.3 \mu$  long, the males 1.3 mm. with a stout stylet 26.8  $\mu$  long and bifid-tipped spicules. The females have a pale yellow phase on turning from white to brown and the cyst wall has characteristic punctations described as coarse and conspicuous with a tendency to run in parallel rows. M.T.F.

## 255—Pamphlet. Department of Health, Southern Rhodesia.

- a. ANON., 1952.—“How to beat bilharziasis.” No. 13, 12 pp. [Revised.]

## 256—Phytoma. Paris.

- a. RITTER, M., 1952.—“La lutte contre les nématodes phytoparasites.” 5 (34), 9–17.

(256a) In this popular article Ritter reviews briefly the few plant parasitic nematodes yet known in France and their economic importance. At greater length he reviews control measures under the headings: preventive methods, agronomic methods, biological, physical and chemical methods. He concludes that it seems impossible to control plant parasitic nematodes by chemical methods alone without the help of cultural measures. But the economic importance of nematodes and the good results of combined control methods justifies the search for better nematicides. M.T.F.

## 57—Phytopathology.

- a. OTEIFA, B. A., 1952.—“Influence of potassium nutrition of the host on the reaction of lima bean plants to infection by a root-knot nematode, *Meloidogyne incognita*.” [Abstract of paper presented at 9th Annual Meeting of the Potomac Division of the American Phytopathological Society, Beltsville, Md., February 26–27, 1952.] 42 (6), 343.
- b. SASSER, J. N., 1952.—“Studies on the control of root-knot nematodes (*Meloidogyne* spp.) with Systox spray (E-1059), an organic phosphate insecticide.” [Abstract of paper presented at 9th Annual Meeting of the Potomac Division of the American Phytopathological Society, Beltsville, Md., February 26–27, 1952.] 42 (6), 343.
- c. MAI, W. F. & LOWNSBERY, B. F., 1952.—“Crop rotation in relation to the golden nematode population of the soil.” 42 (7), 345–347.
- d. MAI, W. F., 1952.—“Susceptibility of *Lycopersicon* species to the golden nematode.” 42 (8), 461.
- †e. ATKINS, Jr., J. G. & TODD, E. H., 1952.—“Laboratory screening of chemicals for control of rice white tip.” 42 (9), 463.

(257a) [For abstract of full account see No. 261e below.]

(257b) Sasser concludes that in the soil Systox inhibits the hatching of *Meloidogyne* spp. and is lethal after long exposure. The infection of tomato seedlings in 5-inch pots and reproduction of the root-knot nematodes were greatly reduced by 300 ml. of Systox applied at concentrations of 0.005% to 1.0%, but over 0.5% was phytotoxic. When transplanted from treated to infested soil the seedlings became heavily infected. Cucumber seedlings grown in soil similarly treated with 0.05% to 0.1% concentrations a week before seeding made better growth than the controls, but over 0.2% caused stunting; root-knot was controlled at 0.1% and higher concentrations. Solutions at 0.05% to 0.2% inhibited the hatching of egg masses for a week, but when transferred from the solution to tap-water hatching took place readily. Severe infections resulted in 30 days from placing egg masses so treated in pots with tomato seedlings. A solution of 0.1% or 0.2% in contact with hatched larvae failed to kill them for several days. P.M.B.

(257c) Mai & Lownsbery conducted experiments on the effect on eelworm population of four 3-year crop rotations compared with continuous potato culture in Long Island. Three-year rotations significantly reduced eelworm infestations but there was no evidence that different rotations had different effects. Continuous cropping with potatoes followed by D-D injection at 450 lb. per acre resulted in a fall in infestation to 4% of that in untreated plots similarly cropped. In a second experiment, twelve 3-year rotations including vegetable, hay and pasture crops were tested. The effect of rotation was to decrease infestation by amounts varying from 49%–82%. In general, grasses appeared to have a greater effect than other crops in reducing infestations, although unfortunately the grasses having the greatest effect were unsuitable as commercial crops on Long Island. D.W.F.

(257d) Mai tested five species and four varieties of *Lycopersicum* including two varieties of *L. esculentum* by growing them from seed in soil heavily infested with *Heterodera rostochiensis*. When the females on the roots of the tomatoes were changing from white to cream-coloured, he dug up all the plants and placed the roots in 15% formalin. He then estimated the numbers of immature females per gm. of root for each plant. All species were susceptible but two collections of *L. peruvianum* proved resistant having 0.4 and 1.0 females per gm. of root as compared with 51 and 107 in the two tomato varieties. M.T.F.

(257e) Laboratory tests with about 50 chemicals proved that most fungicides, insecticides and nematicides, including organic mercury fungicides, were too injurious for field use against *Aphelenchoides oryzae* infecting rice. Experimental nematicides N-244 and N-245 (10% dust formulations) at 2–4 oz. per bushel gave complete kill in several tests without injury to the seed. R.T.L.

† Abstract of paper presented at the 44th Annual Meeting of the American Phytopathological Society, Ithaca, N.Y., September 8–10, 1952.

## 257—Phytopathology (cont.)

- †f. CAIRNS, E. J., 1952.—“Anabiotic survival of a new species of *Ditylenchus* nematode.” 42 (9), 464.
- †g. FASSULIOTIS, G. & FELDMESSER, J., 1952.—“An attempt to concentrate golden nematode-stimulatory elements from potato-root leachings.” 42 (9), 466.
- †h. FEDER, W. A., 1952.—“Observations on the nematocidal action of some organo-phosphorus insecticides.” 42 (9), 466.
- †i. FELDMESSER, J., 1952.—“Root galls of tomato induced by *Heterodera rostochiensis* Woll., the golden nematode.” 42 (9), 466.
- †j. LOWNSEBURY, B. F., 1952.—“Host preferences of the recently discovered tobacco cyst nematode, *Heterodera* sp.” 42 (9), 469.
- †k. MAI, W. F. & VON MECHOW, J., 1952.—“Relative humidity in relation to the retention of viability of larvae enclosed in cysts and free larvae of the golden nematode, *Heterodera rostochiensis*, Wollenweber.” 42 (9), 469—470.
- †l. MILLER, L. I., 1952.—“Control of the sting nematode on peanuts in Virginia.” 42 (9), 470.
- †m. SASSER, J. N. & TAYLOR, A. L., 1952.—“Studies on the entry of larvae of root-knot nematodes into roots of susceptible and resistant plants.” 42 (9), 474.

(257f) In commercial mushroom production, *Ditylenchus* exhibits anabiosis and has the capacity of reactivation after at least three years on the addition of water. After 100 days of anabiosis the survivors were mostly fourth-stage larvae and young adults. R.T.L.

(257g) Potato-root leachings, when separated into two fractions by freezing at 28°F. to 30°F. for 40 hours, effect different hatching rates in cysts of *Heterodera rostochiensis*. The unfrozen fraction caused a greater hatching rate than the frozen fraction, tap-water or unmodified leachings. R.T.L.

(257h) Free-swimming foliar nematodes live as long in solutions of parathion, TEPP, Systox and selenium as in distilled water. When exposed to the vapour the kill is proportional to its concentration with parathion, TEPP, Systox, Malathion and EPN, but the vapours of OMPA and selenium (as sodium selenate solution) were ineffective. R.T.L.

(257i) *Heterodera rostochiensis* produced localized galled areas in the roots of tomatoes 17 to 18 days after exposure to infection. Saccate females protruded from the galled areas. R.T.L.

(257j) A new cyst-forming nematode which can be reproduced consistently in tobacco and less readily in tomato but fails to mature in potato, has recently been found on tobacco in Connecticut. Morphologically it resembles *Heterodera rostochiensis* which does not infect tobacco. R.T.L.

(257k) When *Heterodera rostochiensis* cysts were stored from 90–327 days at various relative humidities, losses in viability of the larvae were considerably higher at 94·8% and 1·5% than at any of the intervening humidities when the enclosed larvae were stored at room temperature and 75°F., but not at 40°F. After 90 days there was a higher mortality and after 190 days all the larvae were dead. Free larvae stored at 100%, 94·8%, 49%, 10·5% and 1·5% relative humidities at 75°F., 40°F., and room temperature were all dead in 243 days. R.T.L.

(257l) A mixture containing 40% by weight of ethylene dibromide, applied with a shank applicator at a depth of eight inches at least two weeks before planting peanuts, will effectively control *Belonolaimus gracilis* which is associated with stunted plants. Ploughing under of a green cover crop prior to planting also reduces the severity of this condition. R.T.L.

(257m) Resistance to attack by root-knot nematodes differs in different plants. It is attributable to (i) failure of the larvae to enter, (ii) entry of few larvae with little or no development, (iii) entry of large numbers with varying degrees of development. R.T.L.

† Abstract of paper presented at the 44th Annual Meeting of the American Phytopathological Society, Ithaca, N.Y., September 8–10, 1952.

**257—Phytopathology (cont.)**

- †n. MAI, W. F. & LEAR, B., 1952.—“Yearly D-D treatments and continuous potato production in relation to the golden nematode population of the soil.” 42 (9), 481.
- †o. CHRISTIE, J. R., 1952.—“Ectoparasitic nematodes of plants.” 42 (9), 483-484.
- †p. McBETH, C. W., 1952.—“Methods of assaying nematicides.” 42 (9), 484.
- †q. RASKI, D. J., 1952.—“Methods of detecting and investigating plant-parasitic nematodes.” 42 (9), 484.
- †r. STEINER, G., 1952.—“Phenomena and problems of the internal parasitism of nematodes in plants.” 42 (9), 484.
- †s. TAYLOR, A. L., 1952.—“Progress and prospects in the chemical control of nematodes.” 42 (9), 484.
- t. LEAR, B. & MAI, W. F., 1952.—“Methyl bromide for disinfecting burlap bags and machinery to help prevent spread of golden nematode of potatoes.” 42 (9), 489-492.

(257n) The viable population of *Heterodera rostochiensis* in a heavily infested field decreased by 99% after the application in the autumn of D-D mixture to the depth of four inches on 10-inch centres at the rate of 450 lb. per acre. Yearly applications kept the level of infestation low although potatoes were grown annually, and the yields of Green Mountain and Cobbler varieties were significantly higher than in the untreated soil. R.T.L.

(257o) At least four species of ectoparasitic nematodes are major pests injuring the roots of plants in the south-east of the U.S.A., viz., *Belonolaimus gracilis*, *Dolichodorus heterocephalus*, *Xiphinema americanum* and *Trichodorus* sp. The crops affected by these various species are cited. All cause somewhat similar symptoms by feeding at root tips of plants and each feeds on many different species. In Florida, *B. gracilis* probably causes greater crop losses than any other plant-parasitic nematode. R.T.L.

(257p) Methods of assaying new nematicides are briefly summarized as: primary screening which is usually carried out by commercial laboratories; green-house and field tests of the effect on the growth of various crops in nematode infested soil; a study of their phytotoxicity and vertebrate toxicity, and of the chemical residues in soil and plants. R.T.L.

(257q) Owing to the difficulty of making a diagnosis of plant-parasitic nematode infections under field conditions, the practice is urged of making permanent collections on slides or in formalin for definitive identification by specialists. R.T.L.

(257r) The mechanism whereby nematode parasites locate their hosts is discussed. The adaptive relations of parasite to host are described and the various types of parasitism and the metabolism of parasite in relation to host are considered. R.T.L.

(257t) As the method of steam sterilizing farm implements and sacks to prevent the spread of cysts of *Heterodera rostochiensis* from field to field is not satisfactory, various volatile chemicals were tested, of which methyl bromide appears to be the most promising. Burlap bags in loosely tied bundles of 50 and in pressed bales of 300 were successfully fumigated with methyl bromide at a dosage of 23 lb. per 1,000 cu. ft. for 16 hours in an 8 cu. ft. metal drum in a metal lined vault, or beneath a warp sateen cover coated with ethylcellulose. The vapour also eradicated viable cysts from machinery under covers coated with vinyl resin or a polyethylene film. Treatment was equally effective at 50°F. and 80°F. R.T.L.

**258—Plant Pathology. London.**

- a. SOUTHEY, J. F., 1952.—“Unusual chrysanthemum eelworm symptoms.” 1 (2), 48-49.

(258a) *Aphelenchoides ritzema-bosi* can produce two kinds of damage to chrysanthemums by causing (i) blotching and dying off of the lower leaves by feeding endoparasitically and (ii) distortions of the younger leaves around and below the apical buds by feeding ectoparasitically in the apical buds, some of which become blind. R.T.L.

† Abstract of paper presented at the 44th Annual Meeting of the American Phytopathological Society, Ithaca, N.Y., September 8-10, 1952.

**259—Poultry Field. Preston.**

- a. GORDON, R. F., 1952.—“Parasites and disease in built up litter.” 5 (3), 6-8.

(259a) Gordon confirms Koutz's conclusion that on freshly built-up litter substantial populations of coccidia and parasitic worms can be acquired by poultry. Outbreaks are more difficult to observe in the early stages.

R.T.L.

**260—Presse Médicale.**

- a. MOREIRA DA FONSECA, J., 1952.—“Le système neuro-endocrinien dans l'ankylostomiase.” 60 (4), 64.  
 b. BONNIN, H. & MORETTI, G. F., 1952.—“Lois d'occurrence de l'éosinophilie dans les parasitoses animales.” 60 (11), 221-222.  
 c. MONNEROT-DUMAINE, M., 1952.—“Bilharziose à *Schistosoma haematobium*.” 60 (26), 557-558.

(260b) Parasitic eosinophilia in man is caused only by helminths which include a tissue phase in their life-cycle in man. This may be either transient, as in infections with *Ascaris* hookworm and *Strongyloides*, or prolonged, as in schistosome, liver-fluke, *Paragonimus*, filarial and *Trichinella* infections. Treatment with piperazine derivatives causes a rapid rise in the eosinophil count. A degree of eosinophilia may also occur in some cases of hydatidosis or cysticerciasis.

P.M.B.

**261—Proceedings of the Helminthological Society of Washington.**

- a. TARJAN, A. C., 1952.—“The nematode genus *Hemicycliophora* de Man, 1921 (Criconematidae) with a description of a new plant-parasitic species.” 19 (2), 65-77.  
 b. RASKI, D. J. & SHER, S. A., 1952.—“*Sphaeronema californicum*, nov.gen. nov.spec. (Criconematidae: Sphaeronematinae, nov.subfam.) an endoparasite of the roots of certain plants.” 19 (2), 77-80.  
 c. MARTIN, H. M., 1952.—“Anthelmintic studies with 6-tertiary-butyl-m-cresol in dogs.” 19 (2), 81-85.  
 d. RASKI, D. J., 1952.—“On the morphology of *Criconemoides* Taylor, 1936, with descriptions of six new species (Nematoda: Criconematidae).” 19 (2), 85-99.  
 e. OTEIFA, B. A., 1952.—“Potassium nutrition of the host in relation to infection by a root-knot nematode *Meloidogyne incognita*.” 19 (2), 99-104.  
 f. ALLEN, M. W., 1952.—“Taxonomic status of the bud and leaf nematodes related to *Aphelenchoides fragariae* (Ritzema Bos 1891).” 19 (2), 108-120.  
 g. DURBIN, C. G., 1952.—“Longevity of the liver fluke, *Fasciola* sp. in sheep.” 19 (2), 120.  
 h. CHITWOOD, M. B., 1952.—“Some observations on *Rictularia halli* Sandground 1935 (Nematoda).” 19 (2), 121-123.  
 i. KUNTZ, R. E., 1952.—“Natural infection of an Egyptian gerbil with *Schistosoma mansoni*.” 19 (2), 123-124.  
 j. THOMAS, L. J., 1952.—“*Gongylonema pulchrum*, a spirurid nematode infecting man in Illinois, U.S.A.” 19 (2), 124-126.  
 k. TROMBA, F. G. & SMITH, W. N., 1952.—“*Longibucca lasiura*, McIntosh and Chitwood, 1934; new host records.” 19 (2), 126.

(261a) Tarjan gives an emended diagnosis of the genus *Hemicycliophora* de Man, 1921 with brief descriptions of the species. *Hemicycliophora parvana* n.sp. from soil at Sanford, Florida, U.S.A. is figured and described from 12 females, no males being found. This new species most closely resembles *H. thienemanni* (Schneider, 1925) Loos, 1949 but has a wider body, a slightly shorter oesophagus and a much longer tail. The inner cuticular surface of the lateral fields has characteristic sub-circular infoldings. *H. parvana* reproduced on *Apium graveolens* L. in the green-house.

J.B.G.

(261b) *Sphaeronema californicum* n.g., n.sp. found associated endoparasitically with the roots of *Umbellularia californica* Nutt. and *Arctostaphylos* sp. in California is described and figured. A new sub-family Sphaeronematinae and a new genus *Sphaeronema* are erected within the family Criconematidae. The female body is subspherical with a thick cuticle reticulately marked. The protruding vulva is subterminal. The males are degenerate, without bursa. In shape and structure they resemble *Paratylenchus*.

J.B.G.

(261c) From further tests of 6-tertiary-butyl-m-cresol as a vermifuge for dogs Martin found that it was highly efficient against ascarids except when the animals were fed six hours before treatment. Many of the worms were expelled within 30 minutes to a few hours. Emesis sometimes followed. Of 266 ascarids harboured by 37 dogs, 97.3% were expelled. Against *Taenia*, *Dipylidium* and *Ancylostoma caninum* the effects were variable, but 96% of *Uncinaria stenocephala* were expelled. The drug was of no value in *Trichuris* infections. The drug was administered in doses of 0.05 c.c. to 0.3 c.c. per lb. body-weight and appears to be effective regardless of the size of the dose; it was not toxic when up to 0.4 c.c. per lb. body-weight was given orally. R.T.L.

(261d) Raski discusses the limits of the genus *Criconemoides* and the morphological characters on which these limits are based. He describes and figures six new species, viz., *C. xenoplax*, *C. curvatum*, *C. teres*, *C. parvum*, *C. cylindricum* and *C. lobatum*. In addition *C. mutabile* Taylor, 1936 and *C. informe* (Micoletsky, 1921) Taylor 1936 are redescribed from neotypes. A key is given by which the species may be differentiated. J.B.G.

(261e) Oteifa grew lima bean plants in 3-gallon crocks of sand with culture solution. An inoculum equivalent to either 50 or 200 egg masses of *Meloidogyne incognita* was added to some of the crocks and three levels of potassium were given in the nutrient solution. The experimental design was a randomized complete block with four replications and the plants were grown for 70 days. Estimations were then made of fresh and dry weights and the plants were analysed for phosphorus, magnesium, calcium, potassium and nitrogen. Oteifa found a general reduction in total fresh and dry weight of inoculated as compared with control plants. An excess of potassium above the optimum gave no significant increase in total growth in control plants but gave a highly significant increase in infested plants: moderately infested plants given excessive potassium made almost normal growth. An increase in infestation led to a decrease in potassium absorbed while other elements were absorbed in considerably greater amounts. It is suggested that nematode damage is correlated with available potassium and nematodes thus cause marked injury to plants with insufficient available potassium: addition of this element may reduce the damage. The effects may be due to reduction of the root system by infestation, coupled with interference with translocation caused by the galls and perhaps the differential absorption of potassium may be partly due to its use by the nematodes in nutrition and egg production. M.T.F.

(261f) After giving the characters of the genus *Aphelenchoides* Fischer, 1894, Allen redescribes fully, with detailed drawings, the species *A. fragariae* (Ritzema Bos, 1891) Christie, 1932, *A. ritzema-bosi* (Schwartz, 1912) Steiner, 1932, *A. besseyi* Christie, 1942 and *A. subienis* (Cobb, 1926) Steiner & Buhner, 1932. He synonymizes *A. oryzae* Yokoo, 1948 with *A. besseyi* on the grounds that there are no morphological differences between them. A key is given by means of which the four species can be separated on morphological characters. M.T.F.

(261g) Three sheep, each of which had been given 110 metacercariae of *Fasciola* sp., were kept under conditions which precluded reinfection. Durbin reports that liver-fluke eggs were first found in the faeces 111 and 114 days after infection; autopsy of the first sheep nearly 8 years, and the third sheep about 11 years after exposure showed living flukes in the liver and viable eggs in the contents of the gall-bladder. The second sheep was not examined post mortem. S.W.

(261h) Chitwood describes in detail and figures the cephalic structures of *Rictularia halli*. She finds that Sandground confused the laterodorsal papillae with the amphids. *R. halli* can be distinguished from other species by (i) the extreme dorsal position of the mouth opening, (ii) the small delicate spines and combs of which there are never less than 36 (27 to 48 are prevulvar), and (iii) the size of the small spicule which is half the length of the long spicule. R.T.L.

(261i) In the routine examination for helminths a single *Gerbillus pyramidum*, taken in November about 20 miles from Cairo, had 3 immature females of *Schistosoma mansoni* in the portal system. R.T.L.

(261j) A gravid *Gongylonema pulchrum* emerged from the mucous membrane of the lower lip of a student at the University of Illinois. This is the sixteenth recorded case and the seventh for the U.S.A. R.T.L.

(261k) Two new hosts for *Longibucca lasiura* are reported, viz., *Corynorhinus rafinesquii* and *Myotis l. lucifugus*. Both bats were taken from a cave in Pendleton Co., West Virginia. R.T.L.

## 262—Proceedings of the Louisiana Academy of Science.

- a. BENNETT, H. J. & ROBERTS, J. H., 1952.—“The genus *Cercorchis* as representative of the platyhelminthes for introductory zoology.” 15, 5-8.
- b. BIGLANE, K. E. & BENNETT, H. J., 1952.—“The cyclic incidence of *Cercorchis* in *Pseudemys scripta troostii* from the vicinity of Baton Rouge, Louisiana.” 15, 8-11.

(262a) Platyhelminthes are the most interesting and valuable of the invertebrate phyla for teaching purposes. The abundant *Cercorchis* species which are readily obtainable from these turtle form excellent material for study of platyhelminth organs and systems. R.T.L.

(262b) The occurrence of *Cercorchis* in the turtle, *Pseudemys scripta troostii*, in Louisiana is cyclic, the maximum being reached in the vicinity of Baton Rouge, Louisiana, in March to June. The first immature forms were found in the latter part of February and the last immature forms in May and June. Thus the life of the mature worms does not exceed two months. R.T.L.

## 263—Queensland Agricultural Journal.

- a. SMITH, W. A., 1952.—“Tobacco pests in Queensland.” 75 (2), 85-104.

(263a) *Heterodera marioni* is one of the most widely spread soil pests of tobacco in Queensland. Treatment with D-D mixture has been practised but is not yet standardized. Reduction of the interval of three weeks between fumigation and planting may result in crop injury. R.T.L.

## 264—Report. Department of Scientific and Industrial Research, New Zealand.

- a. TETLEY, J. H., 1952.—“Nematode parasitism in sheep.” 26th (1951-52), p. 83.

(264a) Lambs fed on a pure stand of high glucoside white clover have a lower nematode parasitism than those fed on red clover, which in turn have fewer nematodes than those fed on cocksfoot, but the result cannot be attributed to the glucoside content alone. R.T.L.

## 265—Research Bulletin of the Hokkaido National Agricultural Experiment Station.

- a. MUKASA, K. & ICHINOHE, M., 1952.—[A study on the nematode-disease index to soybean varieties using relative index system.] 27 (3), Reprint 4 pp. [In Japanese: English summary.]

(265a) Using the relative index system of Smith & Taylor (1947) to assess the damage caused to 14 varieties of soya bean by *Heterodera schachtii* [now *H. glycines* Ichinohe], Mukasa & Ichinohe found that the system could be applied to this nematode and found statistically significant differences in susceptibility, ranging from a disease index of 9.1 to one of 72. M.T.F.

## 266—Revista Chilena de Pediatría.

- a. BAEZA DONOSO, F., 1952.—“Abscesos hepáticos y peritonitis secundaria a ascaridiosis.” 23 (2), 82-85. [English summary p. 85.]

**267—Revista Clínica Española.**

- a. ZARAPICO ROMERO, M., 1952.—“Quistes hidatídicos del bazo.” 44 (2), 77-86.

**268—Revista Española de las Enfermedades del Aparato Digestivo y de la Nutrición.**

- a. CALVO MELENDRO, J., 1952.—“Quistes hidatídicos de la cara superior del hígado y anomalías del diafragma.” 11 (1), 25-28.  
b. GUTIÉRREZ ARRESE, D., 1952.—“Calcificación de los quistes hidatídicos.” 11 (1), 77-83.

**269—Revista Ibérica de Parasitología.**

- a. GONZÁLEZ CASTRO, J. & MAÑAS MONTALVO, J., 1952.—“Posible infección accidental y simultánea con virus poliomiélfítico y huevos de *Enterobius vermicularis*.” 12 (3), 227-288. [English summary p. 280.]  
b. LÓPEZ-NEYRA, C. R., 1952.—“*Polystoma palancai* n.sp. (Monogenea: Polystomatidae), parásita de la vejiga urinaria de la rana de San Antón.” 12 (3), 289-295.  
c. CABALLERO Y C., E. & FLORES BARROETA, L., 1952.—“Presencia de *Cyclocoelum mutabile* (Zeder, 1800) Stossich, 1902 en las aves acuáticas de México.” 12 (3), 297-300. [English summary p. 299.]

(269a) Twenty-eight days after the onset of a febrile attack of indeterminate aetiology, consecutive cellophane examinations of one of the authors revealed *Enterobius* ova for the first time. In the preceding months he had made faecal and cellophane smears from cases of poliomyelitis. It was therefore thought possible that his illness might have been due to a poliomyelitis virus and an *Enterobius* infection acquired accidentally and simultaneously in the laboratory. It is suggested that a possible dependence may subsist between these two infections. R.T.L.

(269b) López-Neyra describes and figures *Polystoma palancai* n.sp. from a single specimen recovered from the urinary bladder of *Hyla arborea* in Granada. It measured 2.2 mm. by 0.73 mm. and is thus the smallest species of the genus which according to Price's revision of the genus in 1937 then contained seven species from the bladders of amphibians. It is distinguished from *P. gallieni* (i) by its smaller size, (ii) by the form of the intestinal caeca in which, in the living specimen, dark granular inclusions were visible and (iii) by the presence of two transverse anastomoses between the intestinal caeca. P.M.B.

(269c) *Cyclocoelum mutabile* is redescribed from three specimens found in the air-sacs of a wigeon, *Jacana spinosa gymnostoma*, at San Mateo Atenco in Mexico. R.T.L.

**270—Revista Kuba de Medicina Tropical y Parasitología.**

- a. KOURÍ, P. & KOURÍ, J., 1952.—“Hallazgo del *Inermicapsifer cubensis* en la rata blanca. Nota previa.” 8 (4/6), 27.  
b. CAMAYD ZOGBE, E. & MÉNDEZ PINILLA, A., 1952.—“Oclusión intestinal por *Ascaris lumbricoides*. Reporte de dos casos.” 8 (4/6), 27-29.  
c. BASNUEVO, J. G., 1952.—“La mezcla hexilresorcinol-tetracloroetileno en el tratamiento de la necatoriasis y la taeniasis.” 8 (4/6), 29-33.  
d. KOURÍ, P. & VALDÉS DÍAZ, R., 1952.—“Concepto actual sobre el papel patógeno del *Tricocefalo dispar* (*Trichuris trichiura*). Sintomatología gastro-intestinal, particularmente ceco-apendicular y recto-sigmoideana.” 8 (4/6), 37-41. [Discussion pp. 41-46.]  
e. BASNUEVO, J. G., COWLEY CHÁVEZ, O., SOTOLONGO, F., BLANCO RABASSA, E. & ACHKAR, R., 1952.—“Eine neue Art von Behandlung der Trichocephaliasis.” 8 (4/6), 46-48. [English summary p. 48.]  
f. BASNUEVO, J. G., COWLEY CHÁVEZ, O., SOTOLONGO, F., BLANCO RABASSA, E. & ACHKAR, R., 1952.—“Una nuova terapia della tricocefalosi.” 8 (4/6), 48-50. [English, French & German summaries pp. 49-50.]

(270a) P. & J. Kourí report the finding of *Inermicapsifer cubensis* in the small intestine of two white rats which had been kept in the laboratory for about three years. This is the

first time in 14 years' investigation that the authors have found *I. cubensis* in this host. Pulmonary abscesses were present in one rat which harboured two of the parasites; in the other there was a single specimen. P.M.B.

(270c) Basnuevo reports that 15 c.c. of a mixture (known as Hydroxylen) in the proportion of 1 gm. hexylresorcinol, 4 c.c. tetrachlorethylene and 15 c.c. peanut oil, administered by duodenal tube with 30 c.c. of 30% acacia solution, gives better results against hookworm and *Taenia saginata* than either drug administered separately. For children under 12 years of age the dosage recommended is 1 c.c. per year of age. Five cases with *Necator americanus*, two with *Ancylostoma duodenale* and *N. americanus*, and three with *T. saginata* are reported cured by this mixture. Many of the worms evacuated were partially destroyed. P.M.B.

(270e,f) [These are German and Italian translations of a paper which appeared in *Rev. Kuba Med. trop. Parasit.*, 1951, 7, pp. 57-59. For abstract see *Helm. Abs.*, 20, No. 554a.]

#### 271—Revista Médica de Córdoba.

- a. RODRÍGUEZ, C., 1952.—“Parasitosis por *Fasciola hepática*. Consideraciones. Experiencia personal.” 40 (1), 9-12.

(271a) Rodríguez gives notes on ten new cases of fascioliasis hepatica in man, in which he emphasizes the importance of eosinophilia as a diagnostic symptom, even when faecal examinations are at first negative. Emetine was the most satisfactory treatment although it was not always effective. In a footnote two additional cases are recorded. P.M.B.

#### 272—Revista de Paludismo y Medicina Tropical. Mexico.

- a. ISLAS, C., 1952.—“Técnicas coproparasitoscópicas empleando detergentes.” 4 (2), 77-90. [Portuguese summary p. 88.]

(272a) Of the five detergents tested for use in concentration techniques for faecal examination for helminth eggs and protozoan cysts, the best results were obtained with Tergitol-08 and Aerosol-MA. Aerosol-AY, Tergitol-7 and Triton-X-100 were of less value, although Triton-X-100 was the best for the Carles-Barthelemy acid-ether technique. A modification of Faust's centrifugal concentration technique, in which sodium sulphate is used in place of zinc sulphate, is described: more helminth eggs with more clearly visible structures were recovered than by Faust's original method either with or without a detergent. Those detergents with a higher surface tension, such as Tergitol-08 and Aerosol-MA, are best for centrifugal flotation and those with low surface tension, such as Triton-X-100, for centrifugal sedimentation. The results obtained with the three methods, both with and without each of the five detergents, are tabulated. P.M.B.

#### 273—Revue d'Élevage et de Médecine Vétérinaire des Pays Tropicaux.

- a. BERGEON, P., 1952.—“Fréquence du parasitisme à *Schistosoma spindale* chez les buffles indochinois.” Year 1951-52, 5 (2), 52.

(273a) Bergeon examined post mortem 12 buffaloes selected at random from 50 from the Khanh-Hoa province of South Annam, and found them all to be parasitized with *Schistosoma spindale*. S.W.

#### 274—Riforma Medica. Naples.

- a. CIAMILLO, E. & CATTINI, S., 1952.—“Un raro caso di associazione polmonare di cisti da echinococco e tubercolosi bilaterale.” 66 (2), 37-40.

## 275—Rivista di Parassitologia.

- a. BIOCCA, E. & MASSI, O., 1952.—“Il problema della echinococcosi in Italia: indagini e considerazioni.” 13 (3), 235-240. [English summary p. 240.]
- b. RICCI, M., 1952.—“Ricerche parassitologiche nell'isola d'Ischia. 2—Nuove ricerche con lo 'Scotch cellophane tape' (metodo di Graham) sulla popolazione infantile.” 13 (3), 241-255. [English summary p. 255.]

(275a) There is a high endemicity of hydatid in domesticated animals in Rome and the Italian provinces. Cysts were present in 56% of 841 sheep, in 14.52% of 1,088 cattle and in 8.1% of 1,100 horses. Fertile cysts occurred in 76% of 358 sheep, 15.18% of 24 cattle and 7 out of 9 horses. Of 100 dogs examined in the municipality of Rome 4 contained *Echinococcus granulosus*. No *E. granulosus* were found in 35 domesticated cats, 3 wild cats, 10 foxes and 10 badgers.

R.T.L.

(275b) Of 777 children from 1 to 12 years old examined once by the Scotch tape technique 46.46% were shown to be infected with *Enterobius*. The children were from the counties of Barano, Forio and Porto d'Ischia. Infection was more frequent in those children between the ages of 6 and 12 years.

R.T.L.

## 276—Schweizer Archiv für Tierheilkunde.

- a. BOUVIER, G., BURGISSER, H. & SCHNEIDER, P. A., 1952.—“Influence du parasitisme sur le développement des chevreuils.” 94 (3), 149-152. [English, German & Italian summaries p. 152.]

(276a) Helminth infections of the lungs, intestines and nasal cavities retard the growth of young *Capreolus capreolus* considerably, especially in the Chaumont district of Switzerland. There is marked reduction in the measurements of the skull and the bony core of the horn is reduced by 50%.

R.T.L.

## 277—Scientific Agriculture.

- a. HASTINGS, R. J. & BOSHER, J. E., 1952.—“The discovery of nematodes belonging to the genus *Heterodera* in British Columbia and their host relationships.” 32 (9), 507-510.

(277a) For the first time *Heterodera* has been found at two places in British Columbia. At a nursery near Victoria, on Vancouver Island, the following plants were found infested: *Vicia* sp., *Trifolium dubium*, *T. pratense*, *T. repens*, *Phaseolus vulgaris*, *Capsella bursa-pastoris* and *Erodium cicutarium*. Cysts were found in both cultivated and virgin soils. On the mainland an infestation was discovered on peas in a 5-acre field. Nematodes from both sources were tested on a range of leguminous plants, all of which became infested, with the possible exception of pea tested with the Victoria population. Because the host ranges are wider than those recorded for *H. trifolii* and *H. gäutingiana* in Europe, and are similar for the two populations in question, it is suggested that they are of one species characterized by a strong preference for legumes but not specialized to particular species, and no positive identification is given.

M.T.F.

## 278—Southern Medical Journal.

- a. WILSON, J. F., 1952.—“The treatment of larva migrans with stibanose. A preliminary report.” 45 (2), 127-130. [Discussion p. 130.]

(278a) Wilson reports that stibanose<sup>r</sup> is very effective for the treatment of creeping eruption caused by *Ancylostoma braziliense*. For adults he recommends one intramuscular injection of 4 c.c. daily and covering the lesion with ethyl acetate collodion to prevent the larvae from getting oxygen. There were no side effects. Of 75 cases thus treated, 22 were

completely cured, 50 showed very marked improvement and the patients were comfortable within 24 hours; in only three cases was the treatment ineffective. S.W.

## 279—Therapie der Gegenwart.

- a. POTOTSCHNIG, H., 1952.—“Verlauf und Behandlung einer Oleum Chenopodium Vergiftung.” 91 (2), 65–66.

(279a) Pototschnig describes a severe case of poisoning in a 7-year-old child who was given, in error, a single anthelmintic dose of 35 drops of chenopodium oil instead of the normal 5 drops. The symptoms became progressively worse until the 14th day when a course of treatment with “substance T” [Wirkstoff T-Goetsch—no information is given as to its composition] proved spectacularly successful; by the 23rd day, recovery was almost complete. A.E.H.

## 280—Tijdschrift over Plantenziekten.

- a. SEINHORST, J. W., 1952.—“Een nieuwe methode voor de bepaling van de vatbaarheid van roggeplanten voor aantasting door stengelaaltjes (*Ditylenchus dipsaci* (Kühn) Filipjev).” 58 (4), 103–108. [English summary p. 108.]

(280a) A new method of testing the susceptibility of rye plants to attack by *Ditylenchus dipsaci* is described. Rye grains are inserted into slits cut in thick filter paper pads by means of a chisel. Each pad is covered with thin filter paper on the side where the seedlings appear. The whole is dipped in Knopp's plant culture solution made up in 0.5% Aretan, then pushed into an aluminium holder and placed vertically in a box with other pads which are watered daily or every second day. A trace of ferric chloride is added to the water to prevent chlorosis. Data regarding each individual plant can be recorded by numbering the pads and slits. Infected rye, oats and mangolds provided a source of supply of stem eelworms. Suspensions of infective larvae were made in a solution of carboxymethylcellulose and inoculated into seedlings about 2 cm. long by a syringe with a No. 18 hypodermic needle. Low temperatures (10°C.–15°C.) were favourable for the manifestation of symptoms. R.T.L.

## 281—Transactions of the American Microscopical Society.

- a. KNISKERN, V. B., 1952.—“Studies on the trematode family Bucephalidae Poche, 1907. Part I. A systematic review of the family Bucephalidae.” 71 (3), 253–266.  
 b. SACKS, M., 1952.—“*Langeronia provitellaria* (Lecithodendriidae), a new species of trematode from *Rana pipiens sphenocephala*.” 71 (3), 267–269.  
 c. ABDEL-MALEK, E. T., 1952.—“*Cercaria chandleri*, a new echinostome species from the snail *Helisoma corpulentum* in Lake Itasca, Minnesota.” 71 (3), 277–281.  
 d. TODD, A. C. & CROWDUS, D. H., 1952.—“On the life history of *Ascaridia galli*.” 71 (3), 282–287.  
 e. EDGERLY, R. H., 1952.—“Two new species of Nematoda, *Strongyluris riversidensis* and *Pharyngodon mearnsi*, from lizard, *Streptosaurus mearnsi*.” 71 (3), 288–292.  
 f. SCHELL, S. C., 1952.—“Tissue reactions of *Blattella germanica* L. to the developing larva of *Physaloptera hispida* Schell, 1950 (Nematoda: Spiruroidea).” 71 (3), 293–302.

(281a) For the differentiation of the genera of the Bucephalidae, it is suggested that the following characters should be used: (i) nature of the hold-fast organ, sucker or rhynchus, and the presence of accessory structures e.g. tentacles or fimbrinae; (ii) position of the ovary in relation to the testes and other organs. Seven genera are recognized and a key for their recognition is provided. For each genus there is a succinct diagnosis followed by an historical review of its species. R.T.L.

(281b) *Langeronia provitellaria* n.sp. collected from *Rana pipiens sphenocephala* near Sarasota, Florida, is differentiated from *L. macrocirra* as its vitellaria extend anteriorly for approximately one half the length of the oesophagus, the testes and the ovary are more lobate, the body is much larger and the length to width of the egg is approximately 2:1. R.T.L.

(281c) *Cercaria chandleri* n.sp. is a large-tailed echinostome cercaria which occurs in 4% of *Helisoma corpulentum* in Lake Itasca. It is closely related to the cercaria of *Petasiser nitidus* but has 21 collar spines and the excretory bladder is not subdivided or discontinuous. The gut branches are shorter and only reach the middle of the ventral sucker. The gut in the redia is longer than in that of *P. nitidus*. R.T.L.

(281d) Experiments are cited which show that when two-week old chicks are exposed to infection with  $\pm 50$  ova of *Ascaridia galli*, the migration of the larvae into the intestinal mucosa is infrequent. Most immature *A. galli* mature without leaving the intestinal lumen. R.T.L.

(281e) *Strongyluris riversidensis* n.sp. differs from *S. rubra* in the larger diameter of the head, the shorter oesophagus and the longer spicules of the male. In the female there is a pair of caudal papillae and the ova are smaller. *Pharyngodon mearnsi* n.sp. has caudal alae which do not include a posterior pair of post-anal papillae and in which the anterior pair of post-anals are forked, but differs in detail from *P. auziensis* and *P. neyrae* which share these characteristics. These two new species were collected from *Streptosaurus mearnsi* in California. R.T.L.

(281f) *Physaloptera hispida* of the cotton-rat develops satisfactorily in *Blatella germanica*. The larvae invade the epithelium of colon or rectum within 24 hours, causing local destruction of its cells. A layer of connective tissue gradually encapsulates the parasite. The colon muscles rupture as development proceeds and the cyst bulges into the haemocoel. Encystment is a normal defensive mechanism of the host. R.T.L.

## 282—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. ALVES, W. D. & GELFAND, M., 1952.—“Treatment of schistosomiasis with sodium antimony tri-gluconate by mouth.” 46 (5), 543-546.

(282a) In 21 out of 23 Africans suffering from schistosomiasis no evidence of cure followed the oral administration of enteric-coated tablets of sodium antimony tri-gluconate in dose regimens ranging from 33 grains in 11 days to 91 grains in 13 days. One patient with a *Schistosoma haematobium* infection ceased to pass eggs and the urine remained negative during the three months he was kept under observation. Another patient ceased to pass *S. haematobium* eggs but continued to pass viable eggs of *S. mansoni*. R.T.L.

## 283—Tropical Medicine and Hygiene News.

- a. ANON., 1952.—“Cerebrospinal nematodiasis.” 1 (4), 9-12.

(283a) [A fuller account of this work appears in *Brit. vet. J.*, 1952, 108, 71-88. For abstract see *Helm. Abs.*, 21, No. 70a.]

## 284—Veterinaria. Sarajevo.

- a. BOKO, F., 1952.—“Prinos ispitivanju uzroka krležavosti s obzirom na odnose endoparazita i paratifa prasadi.” 1 (5/7), 579-590. [English summary pp. 579-580.]

(284a) On a large farm with insanitary conditions the mortality in pigs which were heavily parasitized, and among which paratyphoid was prevalent, was reduced from 88.2% to 41% by improved hygiene, the administration of Ascarol against ascaris, Protuvlasan intratracheally against lungworms and phenothiazine against *Oesophagostomum*. Vaccination against paratyphoid had no further effect in reducing losses. Before anthelmintic treatment the helminth incidence was: *Strongyloides*, *Globocephalus* and *Oesophagostomum* 66%, *Ascaris* 24%, *Metastrongylus elongatus* 43%, *Trichuris trichiura* 9% and *Macracanthorhynchus hirudinaceus* 3%. P.M.B.

**285—Veterinariya.**

- a. KOVALEVA, T. S., 1952.—[Cysticerciasis in cattle.] 29 (1), 43. [In Russian.]
- b. ERSHOV, V. S., 1952.—[The use of carbon tetrachloride for sheep with fascioliasis.] 29 (2), 12–17. [In Russian.]

(285a) At the Kiev abattoir during six months of 1951, 168 cattle were found to be infected with *Cysticercus bovis*. The cysts occurred most commonly in the heart muscle and once they were found there they could be found also in other parts, particularly in the tongue and neck muscles. C.R.

(285b) During prophylactic anthelmintic treatment of sheep against *Fasciola hepatica* with 1–2 c.c. of carbon tetrachloride, some of the sheep died between 18 and 24 hours after dosing (or less commonly 48 hours after); they showed lesions of haemorrhagic gastro-enteritis. This happens particularly during dry seasons. Ershov recommends using the drug on a few animals before general dosing, and after treatment to observe the sheep and if necessary to apply symptomatic treatment against any toxic effects. C.R.

**286—Veterinary Medicine.**

- a. BURCH, G. R., 1952.—“Incidence of filariasis in dogs in central Indiana.” 47 (9), 384.

**287—Veterinary Record.**

- a. SCHNELLE, G. B., 1952.—“Canine filariasis.” [Correspondence.] 64 (39), 586.
- b. SOLIMAN, K. N., 1952.—“The clinical manifestations of parasitic bronchitis in cattle with a note on the epidemiology with special reference to adults.” 64 (40), 589–594.

(287a) Schnelle draws attention to the fact that, in Vaughan's report on canine filariasis which appeared in *Vet. Rec.*, 1952, 64, 454–455 [for abstract see *Helm. Abs.*, 21, No. 155h], he is quoted as having reported a marked nocturnal periodicity of circulating microfilariae. This statement is incorrect and he gives the results of his experimental work with Young in 1944 which showed a maximum concentration at 4.30 p.m., provided that the main meal was given regularly at 2.0–2.30 p.m. [see also *Helm. Abs.*, 13, No. 92d]. P.M.B.

(287b) Two types of parasitic bronchitis in cattle are recognized: the classical form in young cattle which is described in the leading text-books and an atypical form characterized by acute asthmatic symptoms in adult cattle. Details are given of four outbreaks of the atypical form in Britain. In these, large numbers of immature fifth-stage larvae of *Dictyocaulus viviparus* were obtained from washings of the bronchial mucosa. Examination of the faeces was not a satisfactory method of diagnosis. A negative result was of no significance. Anti-histamine therapy afforded no relief owing to the extensive emphysema. In severe cases there is cavity formation and abortion may occur. R.T.L.

**288—Veteriner Fakültesi Yayınları. Ankara Üniversitesi.**

- a. GÜRALP, N., 1952.—“Anadolu koyunlarında görülen *Metastrongylidae* nevilerine dair sistematik araştırmalar.” 37, Çalışmalar 21, iv + 53 pp. [English summary pp. 44–45.]

(288a) At Ankara during 1949 and 1950, lungworm infection was observed in 86.18% of 28,221 sheep from 15 different parts of Turkey. The specific incidence was: *Cystocaulus ocreatus* 41.75%, *Dictyocaulus filaria* 27.83%, *Protostrongylus rufescens* 27.83%, *Muellerius minutissimus* 1.32% and *P. unciphorus* 1.25%. Güralp agrees with Mikacic that *P. nigrescens* is synonymous with *C. ocreatus* and points out that the text figure given by Baylis (1929) and copied by Neveu Lemaire (1936) and Mönnig (1949) as that of *P. ocreatus* is probably that of *P. rufescens*. R.T.L.

**289—West African Medical Journal.**

- a. JUNG, R. C. & JELLIFFE, D. B., 1952.—"The clinical picture and treatment of whipworm infection." New series, 1 (1), 11-15.
- b. HUGHES, M. H., 1952.—"Some observations on the bionomics of *Simulium damnosum* Theo. in the southern Gold Coast." New series, 1 (1), 16-20.
- c. WOODRUFF, A. W., 1952.—"Recent advances in tropical medicine. No. 2—*Loa loa* and loiasis." New series, 1 (2), 45-55.
- d. HARRIS, F. C., 1952.—"A field trial of miracid D for the mass treatment of bilharzia in the Gold Coast." New series, 1 (2), 56-58.
- e. ZAHRA, A., 1952.—"Paragonimiasis in the southern Cameroons: a preliminary report." New series, 1 (2), 75-82.

(289a) *Trichuris trichiura* is present in well over 25% of the population of Ibadan, but in the past it has been neglected as unimportant. Symptoms described in text-books have been vague and in many cases unconnected with the parasite. There is, however, a fairly characteristic syndrome associated with heavy infection—prolonged diarrhoea with blood-streaked stools, abdominal pain, tenesmus, and loss of weight. The condition predisposes to amoebiasis and, when left untreated, to prolapse of the rectum. The most effective treatment is with a hexylresorcinol enema, but owing to the cost and need for individual nursing this is unsuitable for mass treatment. Iron and ammonium citrate, although not very efficient, is cheap and non-toxic and therefore more practical under West African conditions. R.M.G.

(289b) In the lower Volta *Simulium damnosum*, vector of *Onchocerca volvulus*, breeds all the year round but only to a slight extent in the dry season. Of 20 adult flies dissected in March one was found naturally infected. Although the dam being built for a hydro-electric station will eliminate the breeding places for about 100 miles upstream, breeding places will remain for about 15 miles seaward unless control measures are adopted. R.T.L.

(289c) Woodruff reviews present knowledge of the epidemiology, clinical pathology and treatment of *Loa loa* infection. The two species of *Chrysops* acting as vectors live in the high forest canopy, normally feeding on the blood of monkeys which carry species of *Loa* indistinguishable from that in man. Houses on hills which form a break in the canopy are especially liable to be entered by the fly. Calabar swellings are probably caused by allergy to metabolic products of the worm. Treatment with hetrazan (banocide) causes death of the adult worm, and appears to sensitize the microfilariae so that they are rapidly destroyed by macrophages in the liver. R.M.G.

(289d) Mass treatment of schistosomiasis with miracid D (nilodin) was tried in two schools in the southern Gold Coast where 85% and 45% of the boys respectively were passing eggs or miracidia in the urine. In the first trial a five-day course was given totalling 75 mg. per kg. body-weight. After four weeks 43% of the treated boys and 20% of the untreated controls were negative. (All boys in these groups were infected at the start.) Increased doses (100 and 125 mg. per kg.) were tried but the children complained of dizziness and vomiting and refused to complete the course. R.M.G.

(289e) Paragonimiasis is endemic in the southern part of the British Cameroons, where at least 4% of the population are infected. Incidence is highest in females, especially adolescents and young women, owing to a belief that crabs are an aid to fertility. *Melania* snails and crabs are both common in the rivers, and the latter are trapped in baskets. Clubbing of the fingers was found a useful sign in the diagnosis of early cases. Two cases of hemiplegia were attributed to the parasite having accidentally reached the brain. Various drugs were tried in a number of cases, but none proved effective. R.M.G.

**290—WHO Newsletter. (World Health Organization.) Geneva.**

- a. AYAD, N., 1952.—"Bilharziasis: a warning." 5 (6), 4.

(290a) Ayad draws attention to the risk of an increase in bilharziasis in Eritrea, Ethiopia, Yemen, British and Italian Somaliland and the Sudan. At least one molluscan vector exists in all these countries. R.T.L.

**291—Yokohama Medical Bulletin.**

- a. HARADA, F., 1952.—“Investigations of hookworm larvae. I. On the phototropism of infective larvae of *Ancylostoma caninum*.” **3** (1), 34–38.
- b. ISHII, N. & OGAWA, Y., 1952.—“Studies on schistosome dermatitis ‘kabure’, caused by the cercariae of *Schistosoma japonicum*.” **3** (2), 57–71.

(291a) Harada studied the phototropism of infective larvae of *Ancylostoma caninum* at two different temperatures, 15°C. and 30°C. A drop of water with many larvae was placed in the centre of each of a number of agar plates which were covered and put into water-baths for 4–5 hours. Each cover was painted black with unpainted areas of different patterns. On removal from the 30°C. water-bath he found that the larvae had migrated to the darkened portions of the plates and avoided the unpainted pattern, thus exhibiting a negative phototropism. In two plates having respectively an unpainted cover and a completely blackened cover, the migration was indiscriminate. In the plates kept at 15°C. for five hours the migration was sluggish and bore no relation to the light or dark areas in the plates. *Rhabditis* sp. from soil, when placed in similarly treated plates at 30°C., showed no evidence of phototropism in their migration.

J.J.C.B.

(291b) “Kabure” is caused by the penetration of cercariae of *Schistosoma japonicum* but may be confused with “ground itch” caused by hookworm larvae and “water itch” or “swimmer’s itch” due to non-mammalian schistosome cercariae. In the Yamanashi area of Japan “ground itch” is rare in the workers in the irrigated rice fields, and non-human cercariae have not been found there. “Kabure” dermatitis occurs only in those previously infected. Experiments on white rats showed that “kabure” is not produced by a primary infection or by a second one given at a short interval. The typical symptoms of macules, papules and erythema, and oedema follow in 24–48 hours when more than 30 days lapse before there is a third exposure.

R.T.L.

**292—Zeitschrift für Ärztliche Fortbildung.**

- a. KLIMARS, G., 1952.—“Zur Pharmakologie einiger Oxyurenmittel.” **46** (3/4), 91–95.

(292a) Klimars discusses the pharmacology, toxicity to host, and efficacy against *Enterobius* of hexylresorcinol, Egressin, malachite green, gentian violet, crystal violet, phenothiazine, D.D.T., benzene hexachloride, and certain aluminium compounds. He considers the last mentioned to be the most promising since they are non-toxic to the host, and only give rise to side effects when administered in abnormally large doses. Oxymors (aluminium aceto-benzoate) is specially recommended: it can be given orally, in an enema, or incorporated in an anal ointment. Oral administration presents no difficulties even with very young children, and of 17 cases so treated 13 were completely cured.

A.E.F.

**293—Zeitschrift für Hygiene und Infektionskrankheiten.**

- a. GOETERS, W., 1952.—“Untersuchungen an Oxyuren. I. Mitteilung. Über das Vorkommen von Oxyureneiern im Nagelschmutz und im Zimmerstaub.” **133** (5), 463–480.

(293a) Goeters reports the recovery of *Enterobius vermicularis* ova from the fingernails of 45 out of 86 children examined, all of whom were known to harbour the parasite. The children’s nails were examined at 6–8 day intervals over a period of three months: no child was positive at every examination. Of the children whose nails were positive 80% were of pre-school age. Various methods of recovering ova from room dust were tested and the zinc chloride technique was found to be the most reliable. Using this method ova were detected in the dust of all rooms used by children over one year old in a children’s hospital. Ova were found most frequently in bathrooms and lavatories. Further experiments showed that the viability (and presumably the infectivity) of eggs obtained from dust was equal to that of eggs recovered from the peri-anal regions of infected children. Eggs from dust remained viable in a dry medium for nine days and in a damp medium for 12–13 days.

A.E.F.

## 294—Zeitschrift für Tropenmedizin und Parasitologie.

- a. ENIGK, K., 1952.—“Zur Biologie von *Strongyloides*.” 3 (3), 358–368. [English summary p. 367.]
- b. MENDHEIM, H., SCHEID, G. & SCHMIDT, J., 1952.—“Die selteneren Spulwurm-infektionen beim Menschen.” 3 (3), 368–371. [English summary p. 370.]
- c. BASNUEVO, J. G., COWLEY CHÁVEZ, O., SOTOLONGO, F., BLANCO RABASSA, E. & ACHKAR, R., 1952.—“Eine neue Art von Behandlung der Trichocephaliasis.” 3 (3), 371–374. [English summary p. 374.]
- d. GREMLIZA, L., 1952.—“Infektionskrankheiten in Südpersien. (Landkreis Soussanguerd.)” 3 (3), 390–396. [English summary p. 396.]

(294a) By experimentally infecting pregnant animals with *Strongyloides* (*S. myopotami* in nutria and *S. ransomi* in pigs) Enigk has shown that prenatal infections can occur. Infection of the foetus must take place not longer than three weeks before birth otherwise larvae will not survive the uterine period. Owing to natural immunity in the sow the foetus may become infected while the mother animal remains negative. Enigk also describes the migration of larvae via the bloodstream to the intestines. In heavy infections of both pig and nutria larvae will settle in the mucosa of the whole of the gastro-intestinal tract; less frequently they are found in the mucous membrane of the bronchi, gall-bladder, bile ducts, ureters and renal pelvis. Enigk identifies rhabditiform larvae recovered from some of his experimental animals as *Rhabditis hominis* which must have contaminated the *Strongyloides* cultures from which the animals were infected; he considers that the male rhabditiform *Strongyloides* larvae reported by other workers may in fact be *Rhabditis* species. A.E.F.

(294b) Mendheim and collaborators review the literature on rare ascarid infections in man and list 18 cases of infection with *Toxocara cati*, one of *Toxocara canis* and five of *Lagochilascaris minor*. The authors describe a further case of *T. canis* infection in a 42-year-old male seen at Munich in 1948, and a note added while the paper was going through the press states that Bacigalupo has recorded (in lit.) *T. canis* in a child in Buenos Aires. No natural infection with *Ascaris vitulorum* has yet been authenticated. A.E.F.

(294c) Basnuevo *et al.* report successful treatment of *Trichuris trichiura* infection with enemas of 15 c.c. of hexylresorcinol and glycerin (in a ratio of 1:15) in 300 c.c. of water or 5% gum arabic solution. Twenty children were treated by this method and all were completely cured after three to five enemas. A.E.F.

(294d) In his review of infectious diseases in the Soussanguerd district of South Persia, Gremliza states that there is a “vast” amount of helminthiasis caused by tapeworms, ascarids and thread worms. Hookworm has not yet been diagnosed with certainty. Trematode infections are important and the most widespread of these is schistosomiasis haematobia, for which a combined treatment with foudadin and emetine is recommended. A.E.F.

## 295—Zentralblatt für Bakteriologie. Abteilung 1. Originale.

- a. WETZEL, R., 1952.—“Helminthen und Immunität.” 158 (3/5), 199–205.

(295a) Wetzel reviews recent work on helminth immunity. He emphasizes the fact that the mechanism regulating the host-parasite relationship works on an antigen/antibody basis; clinical helminthiasis results from a disturbance of this mechanism. Either the infections are so massive and follow each other so quickly that the slowly built up defence is overrun (primary helminthiasis) or an already existing immunity breaks down (secondary helminthiasis). Inoculation with worm extracts, dead worms or immune serum gives no protection against infection. Not until helminths can be bred *in vitro* and their secretions isolated and fractionated will it be possible to evolve effective immunization techniques. A.E.F.

## 296—Zoologicheskii Zhurnal.

- a. IVANOV, A. V., 1952.—[*Udonella caligorum* Johnston, 1835. A representative of a new class of flat worms.] 31 (2), 175–178. [In Russian.]
- b. KIRYANOVA, E. S., 1952.—[The meadow-grass nematode—*Anguina poophila* Kiryanova, sp.nova.] 31 (2), 223–227. [In Russian.]
- c. PETROCHENKO, V. I., 1952.—[On the position of the Acanthocephala in the zoological system. (Phylogenetic connection of the Acanthocephala with other groups of invertebrates.)] 31 (2), 228–237. [In Russian.]

(296a) Ivanov discusses the systematic position of *Udonella caligorum* (a commensal of the Caligidae) which although included in the Monogenea actually possesses some characters of the Monogenea and some of the Temnocephala. In view of its differences from both, he is of the opinion that *Udonella* represents a new class of flatworms, Udonelloidea with *U. caligorum* as the only known species. C.R.

(296b) Kiryanova describes *Anguina poophila* n.sp. from *Poa* sp. It differs from *A. agrostis* by the characteristic shape of the body which is broader in the lower two-thirds of the upper half; the smaller size of the worm, the absence of separate tip at the end of the tail, the position of the excretory pore and the smaller size of the spicules and gubernaculum. It differs even more from other species of *Anguina* in its plant hosts and in the formation of the galls it causes. C.R.

(296c) Petrochenko discusses the zoological position of the Acanthocephala and, in view of their differences from roundworms, is of the opinion that they constitute an independent type, the Acanthocephales, equal in rank to the Platyhelminthes or the Nematelminthes, and containing one class, the Acanthocephala, with about 500 species. C.R.

## 297—Zoologische Jahrbücher. Abteilung für Systematik, Ökologie und Geographie der Tiere.

- a. OSCHKE, G., 1952.—“Systematik und Phylogenie der Gattung *Rhabditis* (Nematoda).” 81 (3), 190–280.

(297a) In this detailed study of the genus *Rhabditis*, Osche has devoted particular attention to the structure of the stoma. He shows that in the metastom, i.e. the region between the ends of the rods of the mesostom and the dot-like elements of the telostom, the thin concave walls carry denticles, normally three in number, on each of the three walls. They may, however, become modified into warts or dots and the walls themselves may also become rotated through an angle of 60° or 120° relative to the dorso-ventral plane. Using the characters thus presented by the stoma, coupled with other morphological features, and basing his observation on the study of 65 species, he puts forward a new classification of the genus in which, incidentally, he includes *Rhabditoides* Goodey, 1929, *Diploscapteroides* Rahm, 1930 and *Rhabditella* (Cobb, 1929) Chitwood, 1930. He erects the following subgenera all within the comprehensive genus *Rhabditis*: (i) *Rhabditis* n.subg., *Teres* group, 8 spp., *Lambdiensis* group, 2 spp., *Coarctata* group, 5 spp., *Cylindrica* group, 3 spp.; (ii) *Choriorhabditis* n.subg., *Longicaudata* group, 23 spp., *Curvicaudata* group, 6 spp., *Elongata* group, 2 spp., *Maupasi* group, 18 spp., *Pellio* group, 16 spp.; (iii) *Telorhabditis* n.subg., 6 spp.; (iv) *Caenorhabditis* n.subg., 8 spp.; (v) *Mesorhabditis* n.subg., 15 spp.; (vi) *Teratorhabditis* n.subg., 3 spp.; (vii) *Protorhabditis* n.subg., 7 spp. Keys are given for all the subgenera and the species placed in them. The following species new to science are described and figured: *R. (Telorh.) inermiformis* n.sp., *R. (Telorh.) hermaphrodita* n.sp., and *R. (Caenorh.) körneri* n.sp. In addition to the foregoing work of systematic importance the paper contains much detailed study and discussion of the characters of lips, stoma and tail of *Rhabditis* larvae with comparisons of these features in adults. Many topics of biological significance in the behaviour of the larval stages and adults are discussed especially in relation to the systematic arrangements proposed. T.G.

## NON-PERIODICAL LITERATURE

298—CAULLERY, M., 1952.—“Parasitism and symbiosis.” London: Sidgwick & Jackson, Ltd., xii + 340 pp., 35/-. [English edition translated by A. M. Lysaght, M.Sc., Ph.D.]

299—CLARE, N. T., 1952.—“Photosensitization in diseases of domestic animals.” Farnham Royal: Commonwealth Agricultural Bureaux [Review Series No. 3 of the Commonwealth Bureau of Animal Health], 58 pp., 7/6d.

Phenothiazine is one of the causes of photosensitization in domesticated animals. It is known to induce keratitis in calves, lambs, pigs and pheasants. R.T.L.

300—COLONIAL OFFICE, 1952.—“Colonial research 1951-1952.” London: H.M. Stationery Office, ii + 253 pp., 6/6d.

On Ukara Island, in Lake Victoria, which has a population of 17,000, there is a 30% incidence both of filariasis and schistosomiasis; the hookworm incidence is only 2%, whereas of *Ascaris* it is over 40%. At Kwimba, Tanganyika, the incidence of schistosomiasis is high. At Kisii, Kenya, the effect on the population of the high endemicity of onchocerciasis is being studied. At Kumba, Cameroons, vast numbers of *Chrysops silacea* were present in the forest canopy, and in a large proportion of 250 *Cercopithecus* filarial worms indistinguishable from *Loa loa* were found on autopsy. In East Africa, bancroftian filariasis is common along the coast and around the Great Lakes where the temperature and humidity are high, but infrequent in the hot, dry interior and in the high hills. The great majority of infected individuals are not inconvenienced and do not show any symptom complex. Dipetalonemiasis in Tanganyika is found in areas too cold for the transmission of bancroftian filariasis. Hetrazan has no effect on the adults or microfilariae. Of thirty species of *Cyclops* in south-west Nigeria, seven are new and two are new subspecies. Laboratory studies prove that five are well adapted for the transmission of guinea-worm and four of these have been found naturally infected. One of these previously reported as *Microcyclops jenkinsi* is now identified as *M. varicans subaequalis*. R.T.L.

301—EUROPEAN PLANT PROTECTION ORGANIZATION, 1952.—“Progress report for 1951.” Paris: European Plant Protection Organization, 19 pp. [Also in French.]

Under the heading “Technical Reports” (p. 7), two publications referring to potato root eelworm are mentioned as having been issued during the year. The first is a report of the deliberations of a working group on this pest and the second, that of a working party on the scientific principles on which governments should base quarantine measures against, *inter alia*, potato root eelworm. M.T.F.

302—NEWSON, I. E., 1952.—“Sheep diseases.” London: Baillière, Tindall & Cox, Ltd., ix + 352 pp., 54/-.

303—THORNTON, H., 1952.—“Textbook of meat inspection. Including the inspection of rabbits, poultry and fish.” London: Baillière, Tindall & Cox, Ltd., 2nd edit., viii + 646 pp., 55/-.

304—VON BRAND, T., 1952.—“Chemical physiology of endoparasitic animals.” New York: Academic Press Inc., x + 338 pp., \$7.50.

Von Brand gives an account of the physiology and biochemistry of endoparasitic protozoa, arthropods and helminths. The first part of the book deals with the chemical composition of parasites; inorganic materials, carbohydrates, lipids, proteins, miscellaneous physiologically

active substances, pigments and toxic substances are discussed in turn. In the second section of the book, aerobic and post-anaerobic gaseous exchanges and biological oxygen relationships, as well as the more conventional aspects of the metabolism of endoparasites are discussed. The final part of the book includes chapters on nutritional relationships between parasites and hosts, metabolic disturbances of parasitic infections and parasite physiology in relation to chemotherapy.

W.P.R.

- 305—WARDLE, R. A. & McLEOD, J. A., 1952.—“The zoology of tapeworms.” Minneapolis: University of Minnesota Press (London: Geoffrey Cumberlege, Oxford University Press), xxiv + 780 pp., 80/-.

This comprehensive treatise on cestodes deals with their anatomy, physiology, life-cycles and host relationships, and discusses the various theories on their origin, evolution and classification. Descriptions and keys are provided for the differentiation of all the known genera and for those species only which have been recorded from North America. The new systematic groups introduced are (i) new orders: Disculicepitidea, Lecanicephala, Caryophyllidea, Spathebothridea and Gyrocotylidea; (ii) new families: Disculicepitidae, Catenotaeniidae, Wenyonidae, Lytocestidae, Capingentidae, Spathebothriidae and Diplocotylidae. The text is illustrated by 419 sets of original drawings and the bibliography covers over 100 pages. R.T.L.

#### ADDENDUM

To Abstract No. 128a in Volume 21, part 2, the following should be added.

Footnotes by Chitwood give (i) a brief diagnosis of a new subspecies named *Meloidogyne arenaria thamesi* from *Bochmeria utilis* and (ii) the opinion that *M. hapla* is possibly a synonym of *Anguillula marioni*. If so, its name becomes *Meloidogyne marioni* (Cornu) n.comb.